

MACHINE TOOL PERFORMANCE ACCESSORIES

2015 Master Catalog



ROYAL
PRODUCTS
Optimize everything.

SUPERCARGE YOUR MACHINE TOOLS

NEW



CNC Collet Chucks
Pages 5–28

- Unparalleled Quality & Accuracy
- Ten-Second Collet Changes
- In Stock for Same-Day Shipping



5C Collet Closers
Pages 29–31

- Custom-Fit to Your Specific Lathe
- 4,000 RPM Operating Speed
- Includes Front-Mount 5C Collet Nose

NEW



Collet Fixtures
Page 32

- Manual Operation
- For 4th and 5th Axis Applications
- Multiple Collet Styles



5C Step Collets
Page 33

- Designed to Hold Oversized Parts
- Head is Easily Bored to Required Size
- Full 1" Bore Depth



5C Expanding Collets
Page 33

- Perfect for I.D. Gripping
- Turned to Size by User
- Repeatable Z-axis Positioning



ER Collets
Pages 34–38

- Standard and Sealed Models
- 0.0002" Ultra-Precision Accuracy
- Inch and Metric Sizes in Stock



Rota-Rack® Parts Accumulators
Pages 39–48

- Collects and Protects Finished Parts
- Run Bar-Fed CNC Lathes Lights-Out
- Pays for Itself in Just a Few Months



CNC Bar Pullers
Pages 49–56

- Easily Automate Any CNC Lathe
- Combo Model Has Built-In Cutoff Tool
- Self-Adjusting Coolant Actuated Model

NEW



Live Centers
Pages 57–94

- Exclusive Roto-Shield™ Technology
- +/- 0.00005" TIR Guaranteed
- High Pressure Coolant Approved



Dead Centers
Pages 94–98

- Full and Half Models for Grinding
- Carbide-Tipped Models for Long Life
- Threaded Models for Live Tailstocks

NEW



Deburring Tools
Pages 99–104

- Unique Tools for Every Application
- Most Competitive Prices in the Industry
- Lifetime Handle Warranty



R8 Quick-Change
Pages 106–107

- Good for Light Production on R8 Mills
- Simple One-Hand Operation
- Wide Range of Holder Styles

SUPERCHARGE YOUR MACHINE TOOLS



Machine Mounts Pages 108–109

- Protect Against Shock and Vibration
- Easily Level Machinery
- Impact and Non-Impact Applications



PneuVac Pump Pages 110 – 111

- Runs On Standard Shop Air
- Fills a 55-Gallon Drum in Seconds
- Great for Cleaning Coolant Sumps



PneuVac Guns Page 111

- Versatile Shop Cleanup Tool
- Two-Way Operation (Blow/Vacuum)
- Deep Hole Model for Blind Holes



Chuck Stops Page 112

- The Safe Way to Chuck Short Parts
- Fits Chuck Jaws up to 2.12" Wide
- Available in Multiple Heights



Sensitive Drill Feed Page 112

- Drill Small Holes on a Drill Press or Mill
- Precise Fingertip Control
- Protects Against Drill Breakage



Vise Liners Page 112

- Grip Parts without Damage
- Fits All Vises
- Great for Threads



Albrecht Precision Drill Chucks Pages 113–122

- World's Most Accurate Drill Chucks
- Models for All Applications
- Stainless Models for Medical Use



Royal Filtermist Mist Collectors Pages 123–152

- Low Cost and Highly Efficient
- Meet OSHA and NIOSH Requirements
- Minimal Maintenance Requirements

Pull-to-a-Stop Quick-Grip™ CNC Collet Chucks



Page 12

Royal's best selling line of Quick-Grip™ CNC Collet Chucks has been expanded to include a new range of Pullback models that incorporate an adjustable stop.

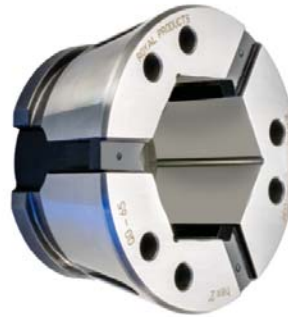
These chucks are often used in high-volume, robot-load applications where the part locates against a shoulder and **air-sensing/position confirmation** is required. Also a good choice for use with servo-driven bar feeders.

NEW

Expanded Range of Quick-Grip™ Collets

As the Royal Quick-Grip™ collet chuck system continues to grow in popularity, **we've increased our standard offering of off-the-shelf collets.**

New for 2015 is a broader range of QG-65 and QG-80 hex collets, plus a new line of QG-65 square collets.



NEW

Pages 18–19

Quick-Grip™ Collet Chuck Extra-Depth Stops



Page 15

NEW

Royal has developed a line of extra-depth stops that **enable long parts to be swallowed** in a Quick-Grip™ CNC Collet Chuck while maintaining precise z-axis positioning.

These stops can be used in conjunction with Royal Accu-Length™ and Pull-to-a-Stop Quick-Grip™ CNC Collet Chucks.

Quick-Grip™ Manual Collet Fixtures

NEW



Page 32

These new collet fixtures have many of the same great features as our Quick-Grip™ CNC Collet Chucks, including ten-second collet changes and parallel-grip collets with a .062" clamping range. Featuring a pullback design with an internally threaded back plate that enables the use of a stop rod, these fixtures are ideal for high production 4th and 5th axis applications.

The bottom and all four sides of the fixture are ground for both vertical and horizontal mounting. For use with Royal Quick-Grip™ 42, 65, and 80-series collets.

Spline Rolling Live Centers

Spline Rolling is a fast, cost-effective process for forming splines and other torque-transmitting shapes onto transmission shafts. The forces involved in this process are high, leading Royal to develop a new line of live centers specifically designed for spline rolling applications.

This new live center line features Royal's exclusive Roto-Shield™ technology, which provides a dramatic increase in bearing life over competitive models. Royal Spline Rolling centers are available from stock in both short and long point configurations, and custom points can be supplied upon request.

NEW



Pages 80–81

"Oil Country" Big-Bore Bull Head Live Centers

NEW



Pages 86–87

These new bull head live centers with interchangeable heads have been specifically designed for oil-country pipe applications, but can be used in any large-bore/heavy part application.

Each interchangeable head covers a range of bore sizes, and keeping the heads short ensures that the workload is carried as close as possible to the bearings for maximum support. Heads measuring up to 15.63" are available off the shelf for same-day shipping, and larger diameter heads can be quickly supplied according to customer requirements.

Why Do Top Manufacturers Insist on Royal Products?



Experience

Royal Products has been a leading American manufacturer of precision metalworking accessories for more than 65 years. The company was founded in 1946 by Bob Curran, who invented and patented the first changeable-point live center with a combination thread/taper interface. Since that time, the Royal product line has grown to include hundreds of unique metalworking accessories designed to help manufacturers squeeze every last drop of performance out of their machine tools.

Quality

Royal Products is an ISO-registered company dedicated to continuous improvement. We embrace lean manufacturing

principles and have earned an excellent reputation among metalworking professionals for outstanding product quality. Before we bring a new product to market, it must first undergo extensive testing in our own factory to ensure that it will exceed our customers' demands. Our philosophy is simple – we would rather explain price once than have to apologize for poor quality time and time again.

Support

Strong technical support is one of Royal's key strengths. From our experienced applications engineers to our large team of factory-trained field reps strategically located throughout the country, we are always available to speak with customers and prospects, review their applications, and help them choose the best tools for their needs. If we don't have the right products for your particular job, we will either design something special or recommend other companies that offer what you need.

Convenience

Royal Products metalworking performance accessories are sold through a large network of machine tool and industrial distributors located throughout the United States, Canada, and Mexico. We stock thousands of products in regional warehouses located throughout the country for fast, low-cost deliveries. For the name and telephone number of your local Royal Products distributor, please contact our customer service department at 1-800-645-4174.



Division of Curran Manufacturing Corporation

200 Oser Avenue
Hauppauge, New York 11788

Tel: 1-631-273-1010
Fax: 1-631-273-1066

Toll-Free USA and Canada
Tel: 1-800-645-4174
Fax: 1-800-424-2082

Email: info@royalprod.com
www.royalprod.com



For a behind-the-scenes peek into Royal and the latest company news, be sure to visit our Facebook page:

www.facebook.com/RoyalProdUSA



CNC COLLET CHUCKS

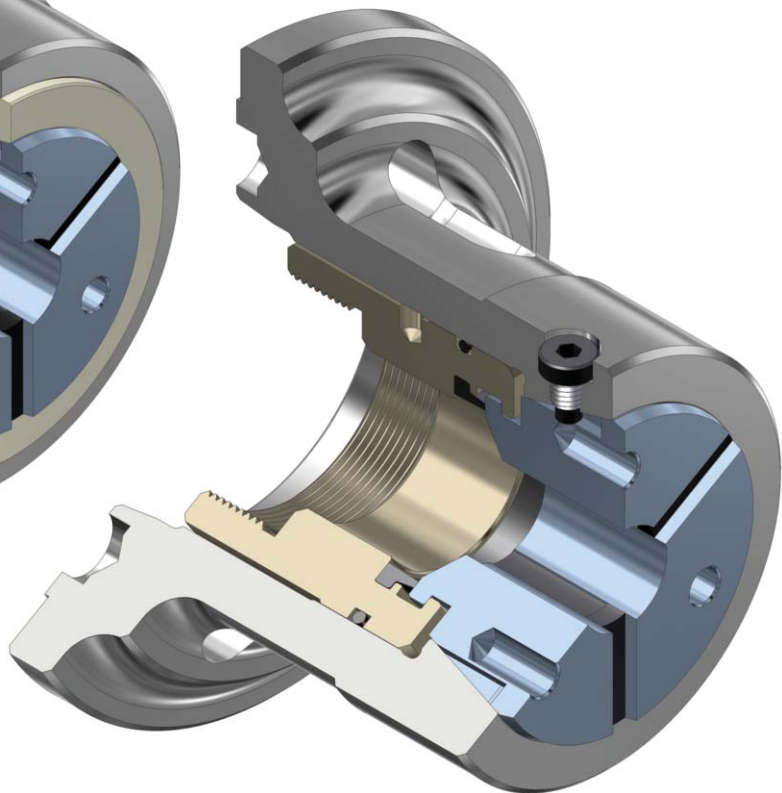
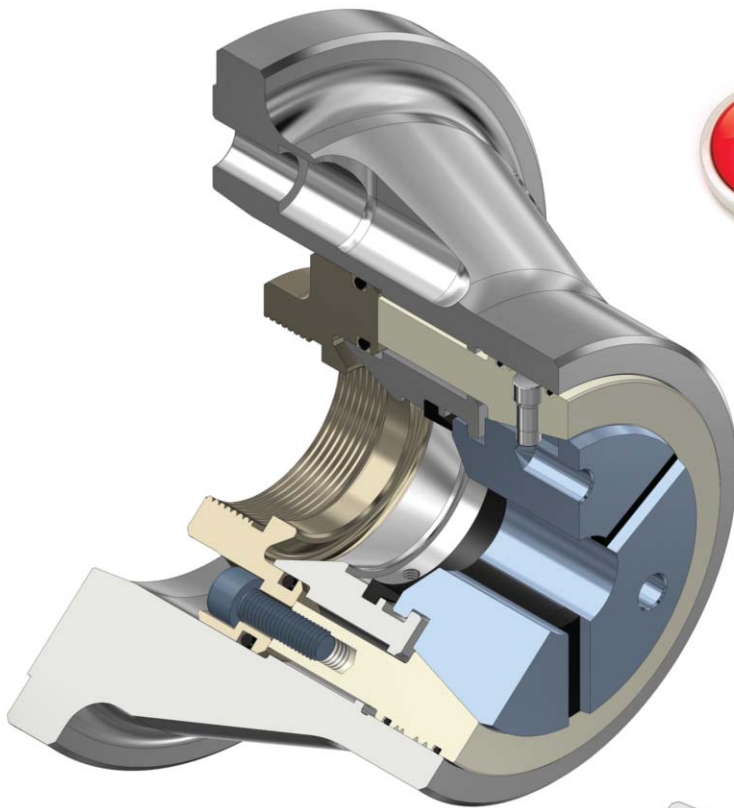
- TEN-SECOND COLLET CHANGES
- 0.0002" TIR OR BETTER
- PARALLEL GRIP WITH A .062" RANGE
- MOST COMPACT CHUCKS IN THE INDUSTRY

ROYAL QUICK-GRIP™ CNC COLLET CHUCKS

ROYAL
PRODUCTS
Optimize everything.



Check out the Royal
Quick-Grip™ CNC Collet
Chuck Video at
www.colletchucks.com



- ✓ 10-Second Collet Changes
- ✓ Widest Collet Gripping Range (.062")
- ✓ Extremely Accurate – 0.0002" TIR
- ✓ Parallel Workpiece Gripping
- ✓ Multiple Styles:
 - Standard
 - Compact
 - Ultra-Compact

Big Benefit #1 Ten-Second Collet Changes

With the Royal Quick-Grip™ CNC Collet Chuck, collet changes take just seconds. Here's how it works:



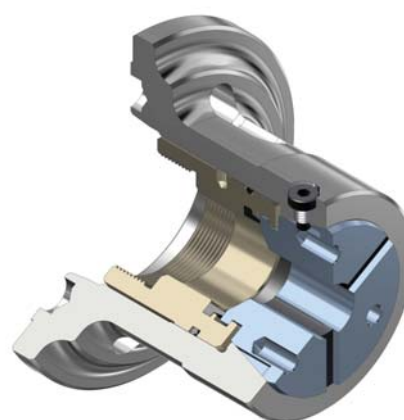
1. The unique collets are constructed of hardened steel segments securely joined together by vulcanized rubber. Each collet contains an annular hook and groove configuration on the rear section of its outer diameter.



2. The installation tool incorporates steel pins that align with drilled holes on the collet face. When these pins engage the face holes and the trigger on the tool is actuated, the collet becomes temporarily compressed.



3. In its compressed state, the collet can then be inserted into the collet chuck, where the hooks on the rear of the collet segments become axially aligned with a retaining groove in the chuck.



4. Releasing the installation tool allows the collet to spring open, seating the hooks in the groove and drawing the matching ID/OD tapers into full, positive contact. The collet is now installed.

Big Benefit #2 Ultra-Precision Accuracy – 0.0002" or Better

While many users purchase the Royal Quick-Grip™ CNC Collet Chuck for its lightning-fast collet changes and wide gripping range, another major benefit of this system is its extreme accuracy.

With CNC collet chucks, there are several factors which affect overall system accuracy. These include:

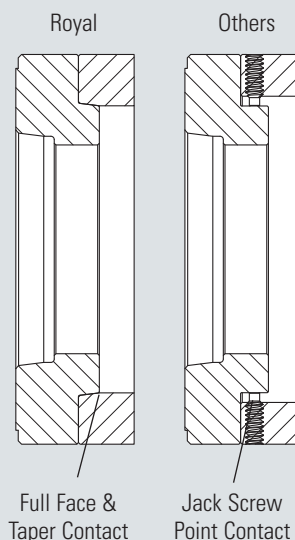
- Accuracy and tolerance of chuck mount (taper angle, gage line diameter, squareness of mounting flange, etc)
- Tolerance and fit between chuck components (body to mounting adapter, closing sleeve to chuck bore, etc.)
- Accuracy and tolerance of collets (OD collet angle, bore sizing, concentricity of ID to OD, etc.)

The manufacturing processes for Royal CNC collet chucks and collets have all been fully optimized to achieve the absolute tightest tolerances and highest accuracies. While we guarantee our chucks at 0.0002" TIR between the A-mount taper and collet chuck closing sleeve, they often run at 0.00005" or better! Round-bore collet accuracy is also guaranteed to be within 0.0002" TIR.

This means that out of the box, with absolutely no indicating in, you can expect to achieve a **Quick-Grip™ total system accuracy of 0.0004" TIR or better.** We know of no other collet chuck manufacturer that can consistently produce such an exact level of precision.

How much time do you waste boring jaws? The Royal Quick-Grip™ pays for itself in no time.

Exclusive Royal Bolt & Go™ Mounting Advantage Because Your Time is Valuable!



All Royal CNC Collet Chucks mount quickly, easily, and accurately due to our exclusive Bolt & Go™ mounting interface.

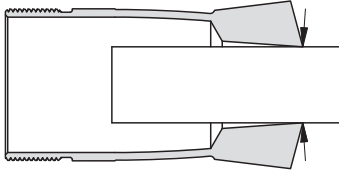
Many Royal chuck models mount directly to the lathe spindle without the need for an adapter plate. However, for models that do use a plate, a precision-ground tapered fit between the plate's male pilot and chuck body's female recess **ensures a consistent, near-perfect fit without the need for any adjustment.** This precision fit also enhances overall system rigidity by providing both face and taper contact.

Other chuck manufacturers use a less precise approach. Instead of providing a near-perfect tapered interface between the chuck body and plate, they rely on a loose fit between a male cylindrical pilot on the plate and an oversized bore within the chuck body. Because there is clearance between these two components, jack screws located around the circumference must be used to radially true-up the chuck on the plate. This process of using the jack screws and an indicator to dial out the runout each time a chuck is mounted wastes valuable production time. The rigidity of this design is also significantly less due to the limited point-contact provided by the screws against the pilot as compared to the full-contact tapered fit of the Royal Bolt & Go™ interface.

Knock 30 Minutes Off Your Setup Time with Royal Bolt & Go™

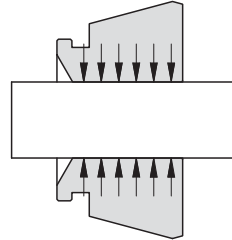
Big Benefit #3

Parallel-Grip Collets with a .062" Range



Spring-Type Collet

With a spring-type collet, unless the bore is exactly sized to the workpiece diameter there will be reduced contact, resulting in compromised accuracy and grip force.



Quick-Grip Collet

With a Quick-Grip™ collet, the segments always remain parallel to the workpiece, helping to maintain optimum accuracy and grip force.

Royal Quick-Grip™ Collets have a **much wider collapse range than conventional spring collets**. A spring-type collet can only be compressed by up to 0.005" before there is a sharp drop off in both grip force and accuracy due to the changing angle of the gripping surface.

However, with the unique design of the Quick-Grip™ collet, each collet segment is joined to the adjacent segments with vulcanized rubber. This ensures that **the collet segments always remain parallel to the workpiece** as the collet is compressed, giving the Quick-Grip™ collet a full collapse range of .062" (nominal diameter +/- .031).

Advantages of this system include:

- The ability to compensate for oversized and undersized bar stock.
- Superior accuracy and grip force – by remaining parallel to the workpiece, each collet segment **makes contact over its entire length**. With a spring-type collet, over-collapsing results in just a narrow ring of contact near the collet face.
- On secondary operations, the wide range of the Royal Quick-Grip™ collet provides the ability to clear larger diameters in order to grip on smaller diameters.

Big Benefit #4

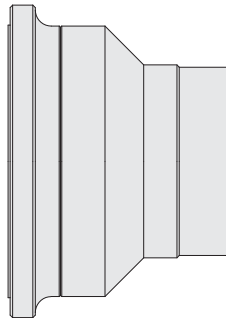
Most Compact Collet Chucks in the Industry

Royal Accu-Length™ CNC Collet Chucks have been optimized for tool clearance and rigidity. Short lengths **maximize the usable space inside the machining envelope**, while extremely compact nose diameters reduce tool interference and enable machining to take place closer to the spindle. Royal offers three distinct length/diameter combinations to suit a wide range of applications:



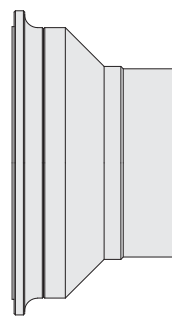
Standard

(Standard Length/Standard Nose Diameter)
These heavy-duty chucks are extremely rigid and make a great choice for most common turning applications.



Compact

(Standard Length/Compact Nose Diameter)
The traditional length ensures that these chucks can accommodate most machine drawtubes, while a greatly reduced nose diameter offers the **best tool clearance in the industry**.



Ultra-Compact

(Compact Length/Compact Nose Diameter)
These are the smallest collet chucks available. Often mounted on sub-spindles, Royal's Ultra-Compact CNC Collet Chucks make a great choice when maximum z-axis capacity is the primary requirement.

QUICK-GRIP™ ACCU-LENGTH™ CNC COLLET CHUCKS

ROYAL
PRODUCTS
Optimize everything.

Bolt & Go™

Our exclusive Bolt & Go™ mounting feature is standard on all Royal Quick-Grip™ Collet Chuck models. **Bolt & Go™ enables chucks to be mounted very quickly and ensures maximum accuracy and rigidity.** See page 8 for additional information.

Completely Sealed

Lubricated for life, these chucks incorporate multiple O-ring seals to keep contaminants out and prevent chip pack-up on bore-thru applications.

High RPM

All Royal Quick-Grip™ Collet Chucks are balanced by design for high-speed operation, and can often be run at higher speeds than conventional 3-jaw chucks because they are less affected by centrifugal force.



Shortest Length

Royal Quick-Grip™ CNC Collet Chucks are among **the shortest chucks available**, providing maximum work envelope utilization. This is especially important for smaller machines with limited z-axis travel.

Heavy-Duty Construction

All chuck components, except for the drawtube connector, are hardened to Rc 61-63 for high rigidity and durability.

Note: Collets sold separately

Extremely Fast Collet Changes

Changing collets on a Royal Quick-Grip™ CNC Collet Chuck takes just a few seconds. A unique hook and groove design for securing collets is used instead of traditional threads.

Wide Gripping Range

Royal Quick-Grip™ Collets have a .062" gripping range (+/- 0.031"), allowing them to accommodate undersized and oversized bar stock.

High Accuracy

Royal Quick-Grip™ CNC Collet Chucks are very accurate – runout on the closing angle is **guaranteed to be within 0.0002" TIR.**

Low-Profile

Royal Quick-Grip™ CNC Collet Chucks have smaller nose diameters than other quick-change collet chucks for superior tool clearance.

Collet Compatibility

Royal Quick-Grip™ Collet Chucks can also utilize other brands of quick-change collets.

Three Keys

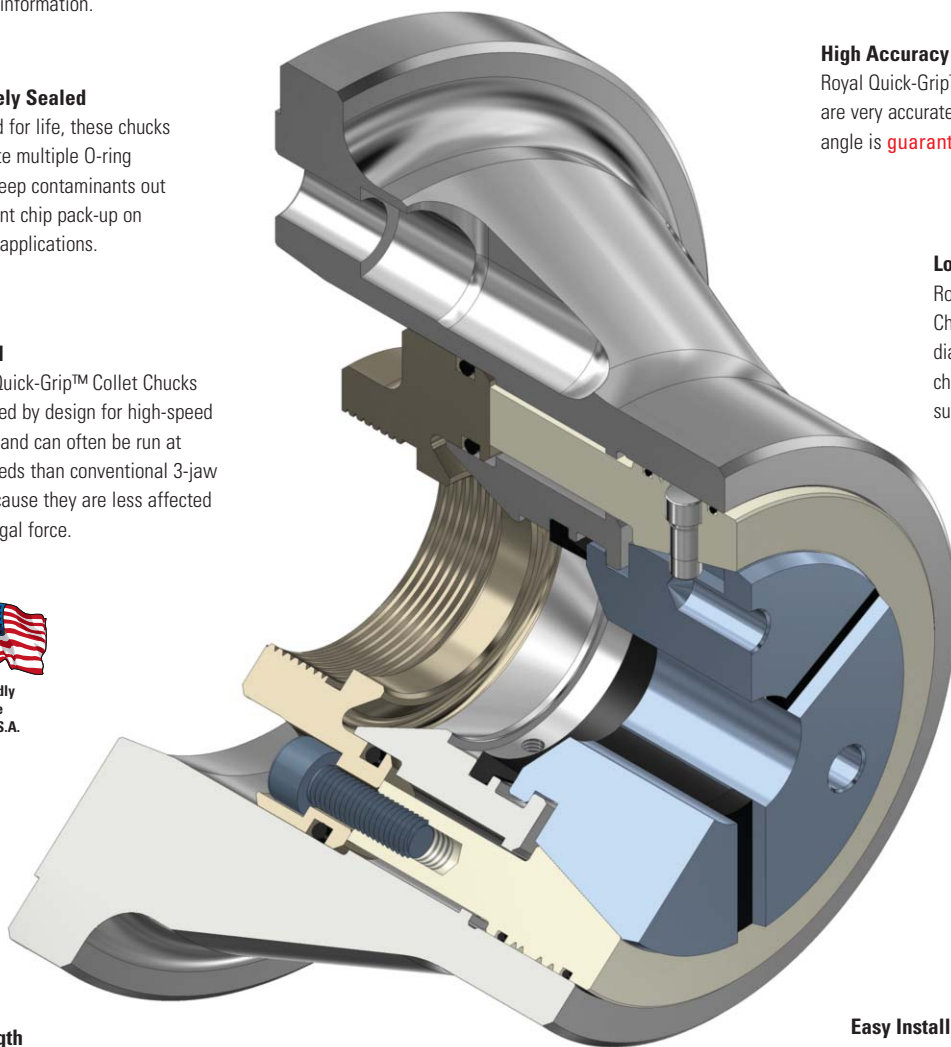
All Royal Quick-Grip™ CNC Collet Chucks incorporate **three anti-rotation keys** for precise C-axis orientation.

Easy Installation

Royal Quick-Grip™ Collet Chucks include all mounting hardware, mounting wrenches, and a custom-machined drawtube connector to ensure hassle-free installation.

Specials

If you have a special application that goes beyond the scope of our standard line, we will be happy to design and build a custom system to meet your needs. Please contact a Royal applications engineer to discuss your requirements.



Dead-Length Operation

Royal Quick-Grip™ Accu-Length™ CNC Collet Chucks incorporate dead length operation to eliminate part pullback. With this design, the collet is held stationary in the chuck body and a tapered sleeve pushes forward to compress it, resulting in precise z-axis workpiece positioning.

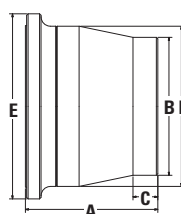
QUICK-GRIP™ ACCU-LENGTH™ CNC COLLET CHUCKS



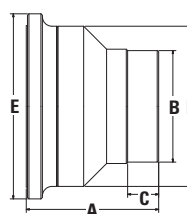
NEW



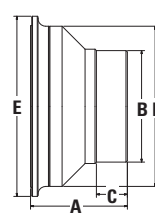
- ✓ 10-Second Collet Changes
- ✓ Widest Collet Gripping Range (.062")
- ✓ Extremely Accurate – 0.0002" TIR
- ✓ Parallel Workpiece Gripping
- ✓ Multiple Styles:
 - Standard
 - Compact
 - Ultra-Compact



Standard
(Standard Length/
Standard Diameter)



Compact
(Standard Length/
Compact Diameter)



Ultra-Compact
(Compact Length/
Compact Diameter)



Royal Quick-Grip™ Accu-Length™ CNC Collet Chucks

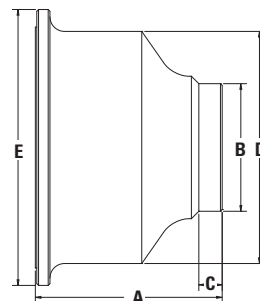
SPINDLE TYPE	COLLET TYPE	CAPACITY	CHUCK STYLE	A OVERALL LENGTH	B NOSE DIAMETER	C NOSE LENGTH	D BODY DIAMETER	E FLANGE DIAMETER	CHUCK WEIGHT (lbs.)	MAX DRAWBAR FORCE (lbs.)	MAX CLAMPING FORCE (lbs.)	MAX RPM	PART NUMBER	PRICE
A2-5	QG-42	1 5/8"	Compact	4.60	3.86	0.98	5.70	6.45	15	7,865	14,160	6,000	44055	\$3,260
A2-5	QG-42	1 5/8"	Ultra-Compact	4.00	3.86	0.98	5.70	6.45	13	7,865	14,160	6,000	44051	3,260
A2-6	QG-42	1 5/8"	Ultra-Compact	4.45	3.86	0.98	6.20	7.25	17	7,865	14,160	6,000	44053	3,260
A2-5	QG-65	2 5/8"	Standard	4.83	5.50	1.40	6.45	6.45	22	10,115	18,205	6,000	44060	3,680
A2-5	QG-65	2 5/8"	Compact	4.80	4.69	0.87	6.45	7.25	19	10,115	18,205	6,000	44065	3,680
A2-5	QG-65	2 5/8"	Ultra-Compact	4.50	4.69	0.87	6.45	7.25	18	10,115	18,205	6,000	44061	3,680
A2-6	QG-65	2 5/8"	Standard	5.33	5.50	1.40	6.45	7.45	26	10,115	18,205	6,000	44062	3,680
A2-6	QG-65	2 5/8"	Compact	5.33	4.69	0.87	6.45	7.25	23	10,115	18,205	6,000	44067	3,680
A2-6	QG-65	2 5/8"	Ultra-Compact	4.65	4.69	0.87	6.45	7.25	18	10,115	18,205	6,000	44063	3,680
A2-8	QG-65	2 5/8"	Standard	5.50	5.50	1.25	6.35	9.45	38	10,115	18,205	6,000	44064	4,160
A2-8	QG-65	2 5/8"	Compact	5.50	4.69	0.87	8.00	9.45	37	10,115	18,205	6,000	44068	4,160
80 MM	QG-65	2 5/8"	Ultra-Compact	4.65	4.69	1.00	6.45	7.25	19	10,115	18,205	6,000	44075	4,030
140 MM	QG-65	2 5/8"	Standard	5.13	5.50	1.40	6.45	7.45	27	10,115	18,205	6,000	44066	4,030
140 MM	QG-65	2 5/8"	Ultra-Compact	4.80	4.69	0.87	6.45	7.45	25	10,115	18,205	6,000	44069	4,030
A2-5	QG-80	3 1/4"	Compact	4.95	5.35	1.00	7.45	7.45	28	11,995	21,590	5,000	44074	4,270
A2-6	QG-80	3 1/4"	Standard	4.95	6.25	1.50	7.45	7.45	30	11,995	21,590	5,000	44070	4,270
A2-6	QG-80	3 1/4"	Compact	4.95	5.35	0.87	7.45	7.45	28	11,995	21,590	5,000	44071	4,270
A2-8	QG-80	3 1/4"	Standard	5.20	6.25	1.50	8.00	9.45	33	11,995	21,590	5,000	44072	4,270
A2-8	QG-80	3 1/4"	Compact	5.20	5.35	0.87	8.00	9.45	31	11,995	21,590	5,000	44073	4,270

QUICK-GRIP™ PULL-TO-A-STOP CNC COLLET CHUCKS

NEW



Chuck includes
standard stop.



- ❑ Incorporates many of the same features as our Accu-Length™ Quick-Grip™ CNC Collet Chucks, except that the collet is not fixed – it moves axially upon opening and closing.
- ❑ Able to accept QG standard and extra-depth stop assemblies for locating parts.
- ❑ This chuck is ideal for high-volume, robot-load applications in which the **part needs to locate against a shoulder and air-sensing / position confirmation is required.**
- ❑ A great choice for any CNC lathe equipped with a servo-driven bar feeder.
- ❑ Can be used either with or without the internal stop for both first and second-operations.
- ❑ **Standard collet stop assembly included with chuck.**

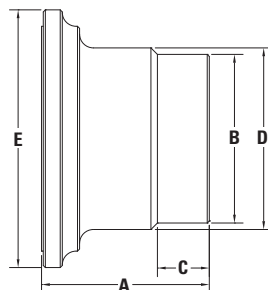


Royal Quick-Grip™ Pull-to-a-Stop CNC Collet Chucks

SPINDLE TYPE	COLLET TYPE	CAPACITY	A OVERALL LENGTH	B NOSE DIAMETER	C NOSE LENGTH	D BODY DIAMETER	E FLANGE DIAMETER	CHUCK WEIGHT (lbs.)	MAX DRAWBAR FORCE (lbs.)	MAX CLAMPING FORCE (lbs.)	MAX RPM	PART NUMBER	PRICE*
A2-5	QG-42	1 ⁵ / ₈ "	5.10	3.54	0.62	6.00	6.70	21	7,865	14,160	6,000	46010	\$2,790
A2-6	QG-42	1 ⁵ / ₈ "	5.50	3.54	0.62	6.25	7.45	25	7,865	14,160	6,000	46012	2,790
A2-5	QG-65	2 ⁵ / ₈ "	5.50	4.37	0.80	6.70	7.62	28	10,115	18,205	6,000	46014	3,250
A2-6	QG-65	2 ⁵ / ₈ "	6.00	4.37	0.80	6.70	7.62	29	10,115	18,205	6,000	46016	3,250
A2-8	QG-65	2 ⁵ / ₈ "	6.40	4.37	0.80	7.95	9.45	45	10,115	18,205	6,000	46018	3,250
A2-6	QG-80	3 ¹ / ₄ "	6.00	4.96	0.80	8.00	8.75	44	11,995	21,590	5,000	46020	3,580
A2-8	QG-80	3 ¹ / ₄ "	6.40	4.96	0.80	8.00	9.45	47	11,995	21,590	5,000	46022	3,580

* Includes standard stop assembly. Collets sold separately.

QUICK-GRIP™ PULLBACK CNC COLLET CHUCKS



- ❑ Traditional pullback design – collet is pulled into chuck to close, pushed out to open.
- ❑ No collet stop capability, therefore this chuck style is **typically used only on jobs where holding precise axial position is not critical.**
- ❑ Includes many of the same features of our QG Accu-Length™ models, including:
 - 10-second collet changes
 - 0.0002" TIR accuracy
 - Wide 0.062" collet range
 - Compact dimensions for superior clearance



Royal Quick-Grip™ Pullback CNC Collet Chucks

SPINDLE TYPE	COLLET TYPE	CAPACITY	A OVERALL LENGTH	B NOSE DIAMETER	C NOSE LENGTH	D BODY DIAMETER	E FLANGE DIAMETER	CHUCK WEIGHT (lbs.)	MAX DRAWBAR FORCE (lbs.)	MAX CLAMPING FORCE (lbs.)	MAX RPM	PART NUMBER	PRICE*
A2-5	QG-42	1 ⁵ / ₈ "	4.45	4.11	3.50	5.25	6.45	11	7,865	14,160	6,000	44020	\$2,000
A2-6	QG-42	1 ⁵ / ₈ "	4.35	4.11	1.50	4.38	7.45	13	7,865	14,160	6,000	44022	2,150
A2-5	QG-65	2 ⁵ / ₈ "	4.30	4.88	1.50	6.45	6.45	19	10,115	18,205	6,000	44028	2,270
A2-6	QG-65	2 ⁵ / ₈ "	4.85	4.88	1.50	5.25	7.45	17	10,115	18,205	6,000	44030	2,270
A2-8	QG-65	2 ⁵ / ₈ "	5.00	4.88	1.50	5.72	9.45	25	10,115	18,205	6,000	44032	2,810
A2-6	QG-80	3 ¹ / ₄ "	4.85	5.47	1.25	5.68	7.45	25	11,995	21,590	5,000	44034	2,870
A2-8	QG-80	3 ¹ / ₄ "	5.00	5.47	1.25	5.72	9.45	25	11,995	21,590	5,000	44036	2,870

* Collets sold separately.



Check out the Royal Quick-Grip™ CNC Collet Chuck Video at www.colletchucks.com

QUICK-GRIP™ CNC COLLET CHUCK ACCESSORIES

Quick-Grip™ Collet Installation Tool



- Easy to use tool **enables collets to be changed in seconds.**
- Simply insert the steel pins into the collet face holes and squeeze main trigger to collapse collet.
- Once the collet is positioned within the chuck, squeeze the trigger lock to expand and release.
- Heavy-duty construction for durability.

Royal Quick-Grip Collet Installation Tool

FITS CHUCK MODEL	PART NUMBER	PRICE
QG-42	44097	\$550
QG-65	44098	550
QG-80	44099	550

Quick-Grip™ Ejectors

- Ejectors are used in sub-spindle applications on Accu-Length™ Chucks to push finished workpieces into the part catcher upon completion.
- A hardened plunger rod and a bronze bushing work together to provide **smooth, consistent operation.**
- New design enables tip to be changed without removing ejector assembly from the chuck.
- Available in standard and compact models:
 - Standard Model – for parts ranging in size from 0.81" to 3.25" dia.
 - Compact Model – for parts ranging in size from 0.18" to 1.25" dia.
- Easily customizable as workpiece configurations require.

For an alternative solution to an ejector, check out the Royal Grippex Coolant-Actuated Bar Puller. The Grippex, when fitted with special jaws, can be used to pull finished parts from a sub-spindle, eliminating the need for an ejector and **freeing up the spindle bore to swallow longer parts.**



Royal Quick-Grip™ Ejectors

FITS ACCU-LENGTH™ CHUCK MODEL	EJECTOR STYLE	PART DIAMETER RANGE	PART NUMBER	PRICE
QG-42	Standard	0.81"–1.63"	44040	\$698
QG-65	Standard	0.81"–2.63"	44041	709
QG-80	Standard	0.81"–3.25"	44042	719
QG-42	Compact	0.18"–1.25"	44043	604
QG-65	Compact	0.18"–1.25"	44044	614
QG-80	Compact	0.18"–1.25"	44045	625

Quick-Grip™ Standard Stops

- A stop is used for **accurate z-axis positioning** of short workpieces within a collet.
- Stop rod length is easily adjusted.
- The stop locates against a shoulder within the chuck body and is held in place with radially-located screws.
- All Royal stops can be installed with chuck mounted to the spindle.
- For use with Royal Accu-Length™ and Pull-to-a-Stop Quick-Grip™ Collet Chuck models.



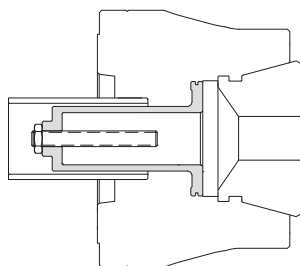
Royal Quick-Grip™ Standard Stops

FITS CHUCK MODEL	MAX THROAT DEPTH*		PART NUMBER	PRICE
	ACCU-LENGTH CHUCK MODELS	PULL-TO-A-STOP CHUCK MODELS		
QG-42	2.03	2.89	44080	\$180
QG-65	2.47	3.33	44081	205
QG-80	2.51	3.33	44084	233

* Measured from collet face.

QUICK-GRIP™ CNC COLLET CHUCK ACCESSORIES

Quick-Grip™ Extra-Depth Stops



- A stop is used for accurate z-axis positioning of a workpiece within a collet.
- Royal Quick-Grip™ extra-depth stops have a greater throat depth than our standard stops, **enabling longer parts to be swallowed while minimizing protrusion beyond the collet face.**
- As with our standard QG stops, rod length is easily adjusted and the entire assembly can be installed with the chuck mounted to the spindle.
- For use with Royal Accu-Length™ and Pull-to-a-Stop Quick-Grip™ Collet Chuck models.

Royal Quick-Grip™ Extra-Depth Stops

FITS CHUCK MODEL	MAX THROAT DEPTH*		MAX PART DIAMETER	MIN DRAWTUBE I.D.	PART NUMBER	PRICE
	ACCU-LENGTH CHUCK MODELS	PULL-TO-A-STOP CHUCK MODELS				
QG-42	5.00	5.86	1.25	1.66	44802	\$319
QG-65	6.00	6.86	1.25	1.66	44804	361
QG-65	6.00	6.86	2.25	2.73	44806	361
QG-80	6.00	6.82	2.00	2.48	44808	435
QG-80	6.00	6.82	2.75	3.23	44810	435

* Measured from collet face.

Hardened and Ground Adapter Plates



- Adapter plates offer the flexibility to mount collet chucks and 3-jaw chucks to a wider range of spindles:
 - Mount a larger chuck on a smaller spindle for increased capacity.
 - Mount a smaller chuck on a larger spindle for increased tool clearance and higher speeds.
- All Royal adapter plates are **hardened to Rc 61-63.**
- High accuracy – 0.0002" TIR guaranteed.
- Metric screws included for mounting plate to spindle.
- Drive button included on all plates.



Royal Adapter Plates

SPINDLE MOUNT	CHUCK MOUNT	PLATE DIAMETER	PLATE THICKNESS	THRU-HOLE DIA.	SPINDLE MOUNTING BOLTS	CHUCK MOUNT THREADS	PART NUMBER	PRICE
A2-5	A2-6	6.68	1.00	2.63	M-10	M-12	44000	\$1,180
A2-6	A2-6	6.68	1.25	3.56	M-12	M-12	44009	1,048
A2-6	A2-8	8.68	1.00	3.75	M-12	M-16	44004	1,363
A2-8	A2-6	8.25	1.75	3.44	M-16	M-12	44010	1,363
A2-8	A2-8	8.69	2.00	4.76	M-16	M-16	44011	1,436
110MM	A2-5	5.31	0.75	2.00	M-10	M-10	44006	1,021
140MM	A2-6	6.68	1.00	3.00	M-10	M-12	44008	1,212

Other configurations available. Contact a Royal Products applications engineer at 1-800-645-4174 with your requirements.

QUICK-GRIP™ COLLETS



- Royal Quick-Grip™ Collets are **available from stock in both smooth and serrated styles:**

- Serrated bore collets are great for first operation work and heavy duty roughing.
- Smooth bore collets are typically used for second operation work to protect finished surfaces.

- All Royal Quick-Grip™ collets are designed for minimal projection beyond the chuck face, (≤ 0.20 "), for optimum rigidity and machine work-zone utilization.

- Hex, square, emergency, and custom sizes available – see pages 18–19.

- Royal Quick-Grip™ Collets are compatible with other brands of parallel-grip quick-change collets, but note that the six-slot design of the model 80 does require the use of a Royal installation tool.

- Full .062" Gripping Range – wider than other quick-change collets on the market, and more than 12x that of traditional spring collets.

- Collets are precision ground to nominal size, with a **gripping range of +/- .031"**.

Example – a 1/2" collet is ground to 0.500" dia., and can hold any part ranging in size from 0.531" dia. down to 0.469" dia.

- Extremely Accurate – total system accuracy, (chuck + collet), of 0.0004" TIR or better.

- Vulcanized rubber between collet segments provides excellent sealing protection against coolant penetration.

- State-of-the-art vulcanization process carries a **lifetime guarantee** against failure.



Note – The unique six-slot design of the Royal QG-80 Quick-Grip™ collets provides increased workpiece contact over the entire gripping range for superior gripping torque over other brands.

Royal QG-42 Collets – \$239 Each

GROUND DIAMETER	RANGE	SMOOTH PART NUMBER	SERRATED PART NUMBER
3/16"	0.219"–0.157"	44101	N/A
7/32"	0.250"–0.188"	44102	N/A
1/4"	0.281"–0.219"	44103	N/A
9/32"	0.312"–0.250"	44104	N/A
5/16"	0.344"–0.282"	44105	N/A
11/32"	0.375"–0.313"	44106	44155
3/8"	0.406"–0.344"	44107	44156
13/32"	0.437"–0.375"	44108	44157
7/16"	0.469"–0.407"	44109	44158
15/32"	0.500"–0.438"	44110	44159
1/2"	0.531"–0.469"	44111	44160
17/32"	0.562"–0.500"	44112	44161
9/16"	0.594"–0.532"	44113	44162
19/32"	0.625"–0.563"	44114	44163
5/8"	0.656"–0.594"	44115	44164
21/32"	0.687"–0.625"	44116	44165

GROUND DIAMETER	RANGE	SMOOTH PART NUMBER	SERRATED PART NUMBER
11/16"	0.719"–0.657"	44117	44166
23/32"	0.750"–0.688"	44118	44167
3/4"	0.781"–0.719"	44119	44168
25/32"	0.812"–0.750"	44120	44169
13/16"	0.844"–0.782"	44121	44170
27/32"	0.875"–0.813"	44122	44171
7/8"	0.906"–0.844"	44123	44172
29/32"	0.937"–0.875"	44124	44173
15/16"	0.969"–0.907"	44125	44174
31/32"	1.000"–0.938"	44126	44175
1"	1.031"–0.969"	44127	44176
1 1/32"	1.062"–1.000"	44128	N/A
1 1/16"	1.094"–1.032"	44129	44177
1 3/32"	1.125"–1.063"	44130	N/A
1 1/8"	1.156"–1.094"	44131	44178
1 5/32"	1.187"–1.125"	44132	N/A

GROUND DIAMETER	RANGE	SMOOTH PART NUMBER	SERRATED PART NUMBER
1 3/16"	1.219"–1.157"	44133	44179
1 1/2"	1.250"–1.188"	44134	N/A
1 1/4"	1.281"–1.219"	44135	44180
1 9/32"	1.312"–1.250"	44136	N/A
1 5/16"	1.344"–1.282"	44137	44181
1 11/32"	1.375"–1.313"	44138	N/A
1 3/8"	1.406"–1.344"	44139	44182
1 13/32"	1.437"–1.375"	44140	N/A
1 7/16"	1.469"–1.407"	44141	44183
1 15/32"	1.500"–1.438"	44142	N/A
1 1/2"	1.531"–1.469"	44143	44184
1 17/32"	1.562"–1.500"	44144	N/A
1 9/16"	1.594"–1.532"	44145	44185
1 19/32"	1.625"–1.563"	44146	N/A
1 5/8"	1.656"–1.594"	44147	44186

QUICK-GRIP™ COLLETS



Royal QG-65 Collets – \$293 Each

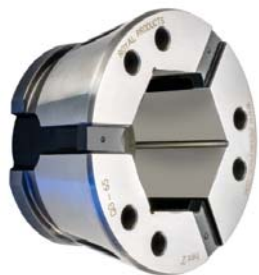
GROUND DIAMETER	RANGE	SMOOTH PART NUMBER	SERRATED PART NUMBER	GROUND DIAMETER	RANGE	SMOOTH PART NUMBER	SERRATED PART NUMBER	GROUND DIAMETER	RANGE	SMOOTH PART NUMBER	SERRATED PART NUMBER
3/16"	0.219"-0.157"	44201	N/A	1 1/32"	1.062"-1.000"	44228	N/A	1 7/8"	1.906"-1.844"	44255	44341
7/32"	0.250"-0.188"	44202	N/A	1 1/16"	1.094"-1.032"	44229	44328	1 29/32"	1.937"-1.875"	44256	N/A
1/4"	0.281"-0.219"	44203	N/A	1 3/32"	1.125"-1.063"	44230	N/A	1 15/16"	1.969"-1.907"	44257	44342
9/32"	0.312"-0.250"	44204	N/A	1 1/8"	1.156"-1.094"	44231	44329	1 31/32"	2.000"-1.938"	44279	N/A
5/16"	0.344"-0.282"	44205	N/A	1 5/32"	1.187"-1.125"	44232	N/A	2"	2.031"-1.969"	44258	44343
1 1/32"	0.375"-0.313"	44206	44306	1 7/16"	1.219"-1.157"	44233	44330	2 1/32"	2.062"-2.000"	44259	N/A
3/8"	0.406"-0.344"	44207	44307	1 7/32"	1.250"-1.188"	44234	N/A	2 1/16"	2.094"-2.032"	44260	44344
13/32"	0.437"-0.375"	44208	44308	1 1/4"	1.281"-1.219"	44235	44331	2 3/32"	2.125"-2.063"	44261	N/A
7/16"	0.469"-0.407"	44209	44309	1 9/32"	1.312"-1.250"	44236	N/A	2 1/8"	2.156"-2.094"	44262	44345
15/32"	0.500"-0.438"	44210	44310	1 5/16"	1.344"-1.282"	44237	44332	2 5/32"	2.187"-2.125"	44263	N/A
1 1/2"	0.531"-0.469"	44211	44311	1 11/32"	1.375"-1.313"	44238	N/A	2 3/16"	2.219"-2.157"	44264	44346
1 7/32"	0.562"-0.500"	44212	44312	1 3/8"	1.406"-1.344"	44239	44333	2 7/32"	2.250"-2.188"	44265	N/A
9/16"	0.594"-0.532"	44213	44313	1 13/32"	1.437"-1.375"	44240	N/A	2 1/4"	2.281"-2.219"	44266	44347
19/32"	0.625"-0.563"	44214	44314	1 7/16"	1.469"-1.407"	44241	44334	2 9/32"	2.312"-2.250"	44267	N/A
5/8"	0.656"-0.594"	44215	44315	1 15/32"	1.500"-1.438"	44242	N/A	2 5/16"	2.344"-2.282"	44268	44348
21/32"	0.687"-0.625"	44216	44316	1 1/2"	1.531"-1.469"	44243	44335	2 11/32"	2.375"-2.313"	44269	N/A
1 1/16"	0.719"-0.657"	44217	44317	1 17/32"	1.562"-1.500"	44244	N/A	2 3/8"	2.406"-2.344"	44270	44349
23/32"	0.750"-0.688"	44218	44318	1 9/16"	1.594"-1.532"	44245	44336	2 13/32"	2.437"-2.375"	44271	N/A
3/4"	0.781"-0.719"	44219	44319	1 19/32"	1.625"-1.563"	44246	N/A	2 7/16"	2.469"-2.407"	44272	44350
25/32"	0.812"-0.750"	44220	44320	1 5/8"	1.656"-1.594"	44247	44337	2 15/32"	2.500"-2.438"	44273	N/A
13/16"	0.844"-0.782"	44221	44321	1 21/32"	1.687"-1.625"	44248	N/A	2 1/2"	2.531"-2.469"	44274	44351
27/32"	0.875"-0.813"	44222	44322	1 11/16"	1.719"-1.657"	44249	44338	2 17/32"	2.562"-2.500"	44275	N/A
7/8"	0.906"-0.844"	44223	44323	1 23/32"	1.750"-1.688"	44250	N/A	2 9/16"	2.594"-2.532"	44276	44352
29/32"	0.937"-0.875"	44224	44324	1 3/4"	1.781"-1.719"	44251	44339	2 19/32"	2.625"-2.563"	44277	N/A
15/16"	0.969"-0.907"	44225	44325	1 25/32"	1.812"-1.750"	44252	N/A	2 5/8"	2.656"-2.594"	44278	N/A
31/32"	1.000"-0.938"	44226	44326	1 13/16"	1.844"-1.782"	44253	44340				
1"	1.031"-0.969"	44227	44327	1 27/32"	1.875"-1.813"	44254	N/A				

Royal QG-80 Collets* – \$499 Each

GROUND DIAMETER	RANGE	SMOOTH PART NUMBER	SERRATED PART NUMBER	GROUND DIAMETER	RANGE	SMOOTH PART NUMBER	SERRATED PART NUMBER	GROUND DIAMETER	RANGE	SMOOTH PART NUMBER	SERRATED PART NUMBER
1/4"	0.281"-0.219"	44403	N/A	1 5/16"	1.344"-1.282"	44437	44537	2 3/8"	2.406"-2.344"	44471	44571
5/16"	0.344"-0.282"	44405	N/A	1 3/8"	1.406"-1.344"	44439	44539	2 7/16"	2.469"-2.407"	44473	44573
3/8"	0.406"-0.344"	44407	N/A	1 7/16"	1.469"-1.407"	44441	44541	2 1/2"	2.531"-2.469"	44475	44575
7/16"	0.469"-0.407"	44409	44509	1 1/2"	1.531"-1.469"	44443	44543	2 9/16"	2.594"-2.532"	44477	44577
1 1/2"	0.531"-0.469"	44411	44511	1 9/16"	1.594"-1.532"	44445	44545	2 5/8"	2.656"-2.594"	44479	44579
9/16"	0.594"-0.532"	44413	44513	1 5/8"	1.656"-1.594"	44447	44547	2 11/16"	2.719"-2.657"	44481	44581
5/8"	0.656"-0.594"	44415	44515	1 11/16"	1.719"-1.657"	44449	44549	2 3/4"	2.781"-2.719"	44483	44583
1 1/16"	0.719"-0.657"	44417	44517	1 3/4"	1.781"-1.719"	44451	44551	2 13/16"	2.844"-2.782"	44485	44585
3/4"	0.781"-0.719"	44419	44519	1 15/16"	1.844"-1.782"	44453	44553	2 7/8"	2.906"-2.844"	44487	44587
13/16"	0.844"-0.782"	44421	44521	1 7/8"	1.906"-1.844"	44455	44555	2 15/16"	2.969"-2.907"	44489	44589
7/8"	0.906"-0.844"	44423	44523	1 15/16"	1.969"-1.907"	44457	44557	3"	3.031"-2.969"	44491	44591
15/16"	0.969"-0.907"	44425	44525	2"	2.031"-1.969"	44459	44559	3 1/16"	3.094"-3.032"	44493	N/A
1"	1.031"-0.969"	44427	44527	2 1/16"	2.094"-2.032"	44461	44561	3 1/8"	3.156"-3.094"	44495	N/A
1 1/16"	1.094"-1.032"	44429	44529	2 1/8"	2.156"-2.094"	44463	44563	3 1/4"	3.219"-3.157"	44497	N/A
1 1/8"	1.156"-1.094"	44431	44531	2 3/16"	2.219"-2.157"	44465	44565	3 1/2"	3.281"-3.219"	44499	N/A
1 3/16"	1.219"-1.157"	44433	44533	2 1/4"	2.281"-2.219"	44467	44567				
1 1/4"	1.281"-1.219"	44435	44535	2 5/16"	2.344"-2.282"	44469	44569				

*Royal QG-80 Collets have six segments instead of three for increased gripping torque.

Quick-Grip™ Hex Collets



NEW

- In addition to our wide range of round-bore collets, Royal also stocks QG-65 and QG-80 hex collets in **many common sizes for immediate delivery.**
- The hex collet gripping range is the same as that of our round-bore models (nominal size $\pm 0.032"$).
- During compression, the segments of Royal quick-Grip™ hex collets remain parallel to the workpiece for maximum accuracy and gripping strength.
- All hex collets are smooth bore.

Royal QG-65 Hex Collets – \$439 Each

RANGE	PART NUMBER
0.282" – 0.344"	44700
0.344" – 0.406"	44701
0.407" – 0.469"	44702
0.469" – 0.531"	44703
0.532" – 0.594"	44704
0.594" – .0656"	44705
0.657" – 0.719"	44706
0.719" – 0.781"	44707
0.782" – 0.844"	44708
0.844" – 0.906"	44709
0.907" – 0.969"	44710

RANGE	PART NUMBER
0.969" – 1.031"	44711
1.032" – 1.094"	44712
1.094" – 1.156"	44713
1.156" – 1.219"	44714
1.219" – 1.281"	44715
1.281" – 1.344"	44716
1.344" – 1.406"	44717
1.406" – 1.469"	44718
1.469" – 1.531"	44719
1.531" – 1.594"	44720
1.594" – 1.656"	44721

RANGE	PART NUMBER
1.656" – 1.719"	44722
1.719" – 1.781"	44723
1.781" – 1.844"	44724
1.844" – 1.906"	44725
1.906" – 1.969"	44726
1.969" – 2.031"	44727
2.031" – 2.094"	44728
2.094" – 2.156"	44729
2.156" – 2.219"	44730
2.219" – 2.281"	44731

Royal QG-80 Hex Collets* – \$559 Each

RANGE	PART NUMBER
0.407" – 0.469"	44740
0.469" – 0.531"	44741
0.532" – 0.594"	44742
0.594" – .0656"	44743
0.657" – 0.719"	44744
0.719" – 0.781"	44745
0.782" – 0.844"	44746
0.844" – 0.906"	44747
0.907" – 0.969"	44748
0.969" – 1.031"	44749
1.032" – 1.094"	44750
1.094" – 1.156"	44751
1.156" – 1.219"	44752

RANGE	PART NUMBER
1.219" – 1.281"	44753
1.281" – 1.344"	44754
1.344" – 1.406"	44755
1.406" – 1.469"	44756
1.469" – 1.531"	44757
1.531" – 1.594"	44758
1.594" – 1.656"	44759
1.656" – 1.719"	44760
1.719" – 1.781"	44761
1.781" – 1.844"	44762
1.844" – 1.906"	44763
1.906" – 1.969"	44764
1.969" – 2.031"	44765

RANGE	PART NUMBER
2.031" – 2.094"	44766
2.094" – 2.156"	44767
2.156" – 2.219"	44768
2.219" – 2.281"	44769
2.281" – 2.344"	44770
2.344" – 2.406"	44771
2.406" – 2.469"	44772
2.469" – 2.531"	44773
2.531" – 2.594"	44774
2.594" – 2.656"	44775
2.656" – 2.719"	44776
2.719" – 2.781"	44777

*Royal QG-80 hex collets have six segments instead of three for increased gripping torque.

Quick-Grip™ Emergency Collets



- Semi-hard QG emergency collets are designed to be machined in place by the customer to **accommodate special sizes, shapes, etc.**
- Available in assorted pilot hole sizes to minimize machining time.
- Boring fixture holds collet segments firmly in place and puts collet under slight compression to ensure accuracy and roundness during machining. Order fixture separately.

Royal Quick-Grip™ Emergency Collets

FITS CHUCK MODEL	PILOT HOLE SIZE	PART NUMBER	PRICE
QG-42	5mm (0.20")	44187	\$337
	15mm (0.59")	44188	337
	30mm (1.18")	44189	337
QG-65	8mm (0.31")	44353	438
	20mm (0.79")	44354	438
	30mm (1.18")	44355	438
	40mm (1.57")	44356	438
QG-80	8mm (0.31")	44360	663
	20mm (0.79")	44361	663
	40mm (1.57")	44362	663
	60mm (2.36")	44363	663



Royal Boring Fixtures

COLLET MODEL	PART NUMBER	PRICE
QG-42	44082	\$193
QG-65	44083	273
QG-80	44088	445

Quick-Grip™ Square Collets



NEW

Royal QG-65 Square Collets – \$439 Each

RANGE	PART NUMBER
0.469" – 0.531"	44734
0.719" – 0.781"	44735
0.969" – 1.031"	44736

RANGE	PART NUMBER
1.219" – 1.281"	44737
1.469" – 1.531"	44738
1.719" – 1.781"	44739

Custom Quick-Grip™ Collets



- Custom Quick-Grip™ collets can be ordered for odd-shaped parts, off-center turning, etc.
- Dedicated regrinding equipment enables us to quickly deliver custom-sized collets.
- Master collets are also available for use with S-type collet pads.

For applications involving custom Quick-Grip™ collets, please contact a Royal Products applications engineer at 1-800-645-4174.

LOW-PROFILE ACCU-LENGTH™ CNC COLLET CHUCKS

ROYAL
PRODUCTS
Optimize everything.

High RPM

All Royal CNC collet chucks are balanced by design for high-speed operation, and can often be run at higher speeds than conventional 3-jaw chucks because they are less prone to the negative effects of centrifugal force.

Spindle Bearing Protection

An oversized flange acts as a coolant slinger to protect lathe spindle bearings from contaminants.

Bolt & Go™

Our exclusive Bolt & Go™ mounting feature is standard on all Royal Low-Profile Collet Chuck models. Bolt & Go™ enables chucks to be mounted very quickly and ensures maximum accuracy and rigidity. See page 8 for additional information.

Completely Sealed

Lubricated for life, these chucks incorporate multiple O-ring seals to keep contaminants out and prevent chip pack-up on bore-thru applications.

Easy Installation

All Royal Low-Profile Collet Chucks include a collet wrench, lubricator, mounting hardware, mounting wrenches, and a custom-machined drawtube connector for **hassle-free installation**. S-type models also include the master collet. S-type collet pads can be ordered separately through your local tooling supplier.

Dead-Length Operation

Royal Accu-Length™ CNC Collet Chucks incorporate **dead-length operation to eliminate part pullback**. With this design, a tapered sleeve pushes forward over the collet to compress it, resulting in precise z-axis positioning.

Outstanding Rigidity

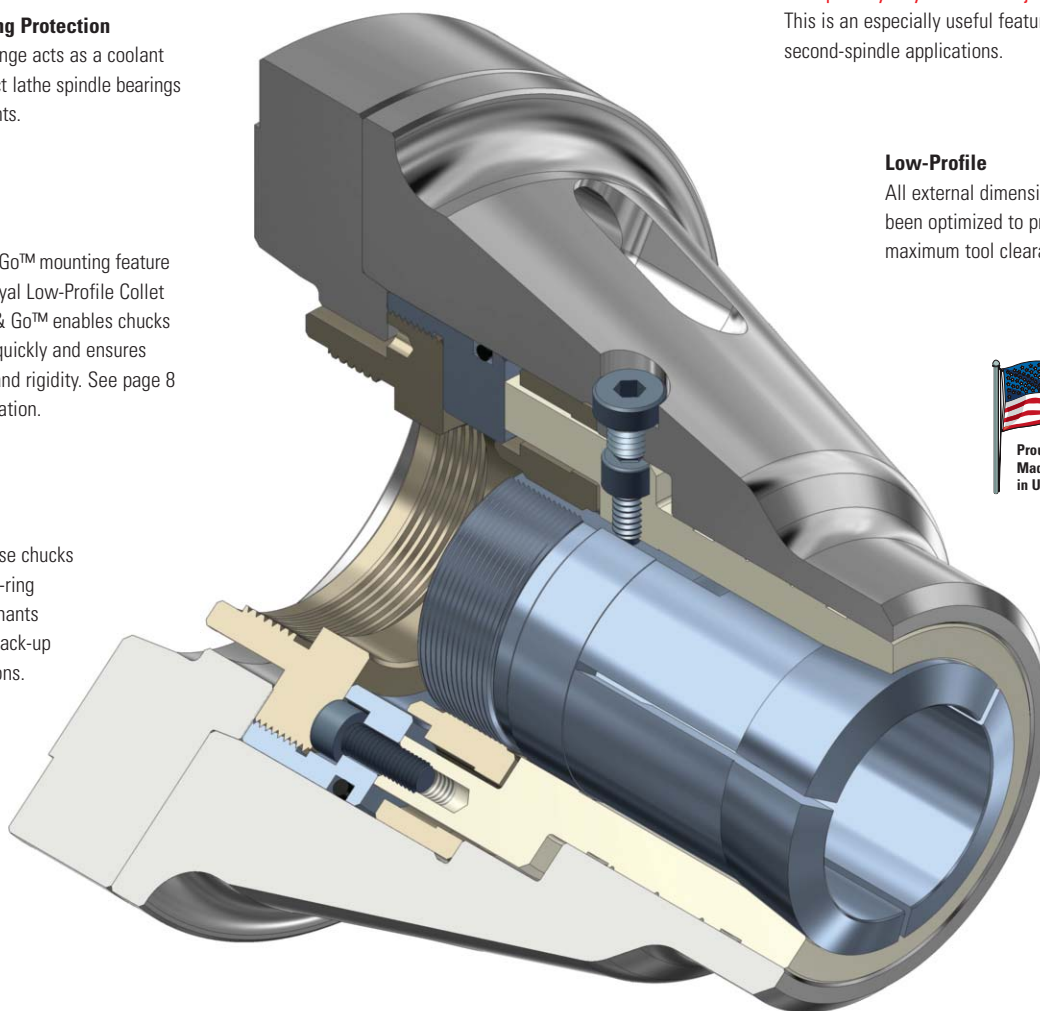
All Royal Accu-Length™ Collet Chucks have been optimized for maximum rigidity, and all components are hardened for strength and durability.

Fine Adjustability

Royal Accu-Length™ master collets contain **multiple keyways for fine adjustability**. This is an especially useful feature for second-spindle applications.

Low-Profile

All external dimensions have been optimized to provide maximum tool clearance.



Specials

If you have a special application that goes beyond the scope of our standard line, we will be happy to design and build a custom system to meet your needs. Please contact a Royal applications engineer to discuss your requirements.

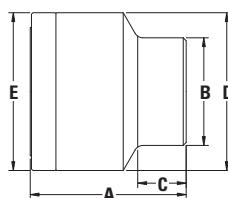
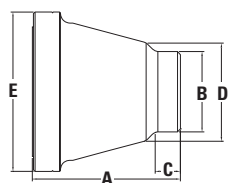
Wide Range

Royal manufactures a wide range of Accu-Length™ Collet Chucks to fit all popular spindle noses and collet styles. Gripping capacities range from 1/64" to 4" diameter.

High Accuracy

All Royal Accu-Length™ CNC Collet Chucks are guaranteed to run within 0.0002" TIR.

LOW-PROFILE ACCU-LENGTH™ CNC COLLET CHUCKS



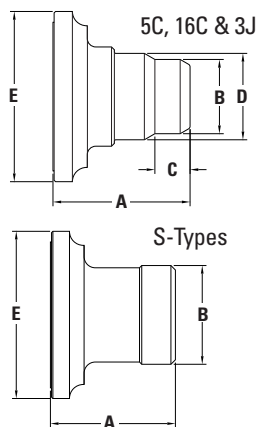
Royal Low-Profile Accu-Length™ CNC Collet Chucks

SPINDLE TYPE	COLLET TYPE	CAPACITY	A OVERALL LENGTH	B NOSE DIAMETER	C NOSE LENGTH	D BODY DIAMETER	E FLANGE DIAMETER	CHUCK WEIGHT (lbs.)	MAX DRAWBAR FORCE (lbs.)	MAX CLAMPING FORCE (lbs.)	MAX RPM	PART NUMBER	PRICE ²
A2-5	5C	1 ¹ / ₁₆ "	5.75	2.43	1.00	4.00	6.45	21	4,000	13,600	6,000	42330	\$3,630
A2-6	5C	1 ¹ / ₁₆ "	5.75	2.43	1.00	4.00	7.45	21	4,000	13,600	6,000	42332	3,790
140mm	5C	1 ¹ / ₁₆ "	4.45	2.43	1.00	4.00	6.45	13	4,000	13,600	6,000	42336	3,790
A2-5	16C	1 ⁵ / ₁₆ "	6.50	3.25	1.03	3.80	6.45	25	5,400	18,300	6,000	42338	3,970
A2-6	16C	1 ⁵ / ₁₆ "	6.25	3.25	1.03	3.80	7.45	25	5,400	18,300	6,000	42340	4,100
A2-8	16C	1 ⁵ / ₁₆ "	7.25	3.25	1.03	3.67	9.45	51	5,400	18,300	4,500	42342	4,240
A2-5	3J	1 ³ / ₄ "	6.23	3.25	1.03	3.97	6.45	24	5,400	26,300	6,000	42344	4,100
A2-5 UC ¹	3J	1 ³ / ₄ "	5.47	3.25	1.03	4.06	5.20	16	5,400	26,300	6,000	42345	4,100
A2-6	3J	1 ³ / ₄ "	6.25	3.25	1.03	3.97	7.45	26	5,400	26,300	6,000	42346	4,240
A2-8	3J	1 ³ / ₄ "	7.00	3.25	1.03	3.97	9.45	49	5,400	26,300	4,500	42348	4,380
110mm UC ¹	3J	1 ³ / ₄ "	5.42	3.25	1.03	4.06	5.20	17	5,400	26,300	6,000	42351	4,100
A2-5	S-20 Master ²	2"	6.38	4.81	1.80	6.45	6.45	35	6,000	29,300	6,000	42360	4,560
A2-6	S-20 Master ²	2"	6.63	4.81	1.80	6.45	7.45	37	6,000	29,300	6,000	42362	4,890
A2-5	S-26 Master ²	2 ⁵ / ₁₆ "	6.63	5.50	1.63	7.45	7.45	48	8,000	39,100	6,000	42363	4,980
A2-6	S-26 Master ²	2 ⁵ / ₁₆ "	6.63	5.50	1.63	7.45	7.45	47	8,000	39,100	6,000	42364	5,030
A2-6	S-30 Master ²	3"	6.62	6.00	1.63	8.45	8.45	61	10,000	48,800	6,000	42368	5,480
A2-8	S-30 Master ²	3"	6.87	6.00	1.63	9.45	9.45	62	10,000	48,800	4,500	42370	5,480
A2-11	S-40 Master ²	4"	8.50	7.75	2.75	8.75	11.50	120	13,500	54,900	4,500	42378	7,870

¹ Ultra-compact design.

² Master Collet included with all S-type chuck models.

LOW-PROFILE PULLBACK CNC COLLET CHUCKS



Royal Low-Profile Pullback CNC Collet Chucks

SPINDLE TYPE	COLLET TYPE	CAPACITY	THREADED NOSE ¹	A OVERALL LENGTH	B NOSE DIAMETER	C NOSE LENGTH	D BODY DIAMETER	E FLANGE DIAMETER	CHUCK WEIGHT (lbs.)	MAX DRAWBAR FORCE (lbs.)	MAX CLAMPING FORCE (lbs.)	MAX RPM	PART NUMBER	PRICE ²
A2-5	5C	1 ¹ / ₁₆ "	N	5.00	2.63	1.05	3.14	6.45	12	4,490	15,750	6,000	42053	\$1,040
A2-5	5C	1 ¹ / ₁₆ "	Y ¹	5.00	2.187-10	1.22	3.14	6.45	11	4,490 ¹	15,750	6,000 ¹	42054	1,170
A2-6	5C	1 ¹ / ₁₆ "	N	5.00	2.63	1.05	3.14	7.45	17	4,490	15,750	6,000	42055	1,230
A2-6	5C	1 ¹ / ₁₆ "	Y ¹	5.00	2.187-10	1.22	3.14	7.45	15	4,490 ¹	15,750	6,000 ¹	42080	1,340
A2-6	5C	1 ¹ / ₁₆ "	N	6.00	2.63	1.05	3.14	7.45	19	4,490	15,750	6,000	42057	1,370
A2-6	5C	1 ¹ / ₁₆ "	Y ¹	6.00	2.187-10	1.22	3.14	7.45	18	4,490 ¹	15,750	6,000 ¹	42058	1,480
A2-8	5C	1 ¹ / ₁₆ "	N	6.00	2.63	1.05	3.14	9.45	30	4,490	15,750	4,500	42059	1,510
A2-5	16C	1 ⁵ / ₁₆ "	N	6.00	3.00	1.85	3.31	6.45	13	5,390	19,800	6,000	42067	1,300
A2-6	16C	1 ⁵ / ₁₆ "	N	6.00	3.25	1.54	3.78	7.45	20	5,390	19,800	6,000	42069	1,370
A2-8	16C	1 ⁵ / ₁₆ "	N	6.00	3.25	1.54	3.78	9.45	30	5,390	19,800	4,500	42071	1,500
A2-5	3J	1 ³ / ₄ "	N	6.00	3.08	1.16	3.33	6.45	13	5,390	26,340	6,000	42061	1,340
A2-6	3J	1 ³ / ₄ "	N	6.00	3.25	1.05	3.87	7.45	20	5,390	26,340	6,000	42063	1,450
A2-8	3J	1 ³ / ₄ "	N	6.00	3.25	1.05	3.87	9.45	31	5,390	26,340	4,500	42065	1,700
A2-5	S-20 Master ²	2"	N	5.63	4.40	–	–	6.45	18	9,500	21,300	6,000	45108	3,040
A2-6	S-20 Master ²	2"	N	5.57	4.40	–	–	7.45	22	9,500	21,300	6,000	45110	3,230
A2-6	S-26 Master ²	2 ⁵ / ₁₆ "	N	6.25	5.75	–	–	7.45	26	11,500	25,700	6,000	45112	3,470
A2-8	S-26 Master ²	2 ⁵ / ₁₆ "	N	6.25	5.75	–	–	9.45	43	11,500	25,700	4,500	45114	3,610
A2-6	S-30 Master ²	3"	N	6.50	5.75	–	–	7.45	28	13,500	30,200	6,000	45115	3,960
A2-8	S-30 Master ²	3"	N	6.53	5.75	–	–	9.45	42	13,500	30,200	4,500	45116	3,740
A2-8	S-40 Master ²	4"	N	7.63	7.90	–	–	9.45	55	13,500	54,900	4,500	45119	5,860
A2-11	S-40 Master ²	4"	N	7.50	7.90	–	–	11.50	87	13,500	54,900	3,000	45120	7,200

¹ Threaded-nose collet chucks are for use with 5C step collets that close on the head, not the 10-degree angle. Never exceed the manufacturer's rpm and drawbar force limits for any threaded accessories.

² Master Collet included with all S-type chuck models.

Now standard with 3 or 4 key locations (depending upon collet style) for finer radial adjustment.

LOW-PROFILE CNC COLLET CHUCK ACCESSORIES

Ejectors



- Ejectors are used in sub-spindle applications to push finished workpieces into the part catcher upon completion.
- Pusher head (shown) can be adjusted or modified as applications require (head not included with 5C, 16C, or 3J models).
- A hardened plunger rod and a bronze bearing work together to provide **smooth, consistent operation**.
- Spring is encased inside of body for protection.

Royal Ejectors for Low-Profile Collet Chucks

FITS CHUCK MODEL	PART NUMBER	PRICE
5C Accu-Length™	45145	\$280
16C Accu-Length™	45146	309
3J Accu-Length™	45147	309
S-20 Accu-Length™	45148	618
S-26 Accu-Length™	45149	628
S-30 Accu-Length™	45150	669

For an alternative solution to an ejector, check out the Royal Grippex Coolant-Actuated Bar Puller. The Grippex, when fitted with special robot gripper jaws, can be used to pull finished parts from a sub-spindle, eliminating the need for an ejector and **freeing up the spindle bore to swallow longer parts**.

Collet Stops



- A collet stop is used for **accurate z-axis positioning** of short workpieces within a collet.
- Stop rod length is easily adjusted.
- Assembly screws directly into rear of collet.

Royal Collet Stops for Low-Profile Collet Chucks

FITS CHUCK MODEL	PART NUMBER	PRICE
5C Accu-Length™ and Pullback	20030	\$15
16C Accu-Length™ and Pullback	45151	144
3J Accu-Length™ and Pullback	45152	144
S-20 Accu-Length™	45153	144
S-26 Accu-Length™	45154	151
S-30 Accu-Length™	45155	169
S-40 Accu-Length™	45158	180

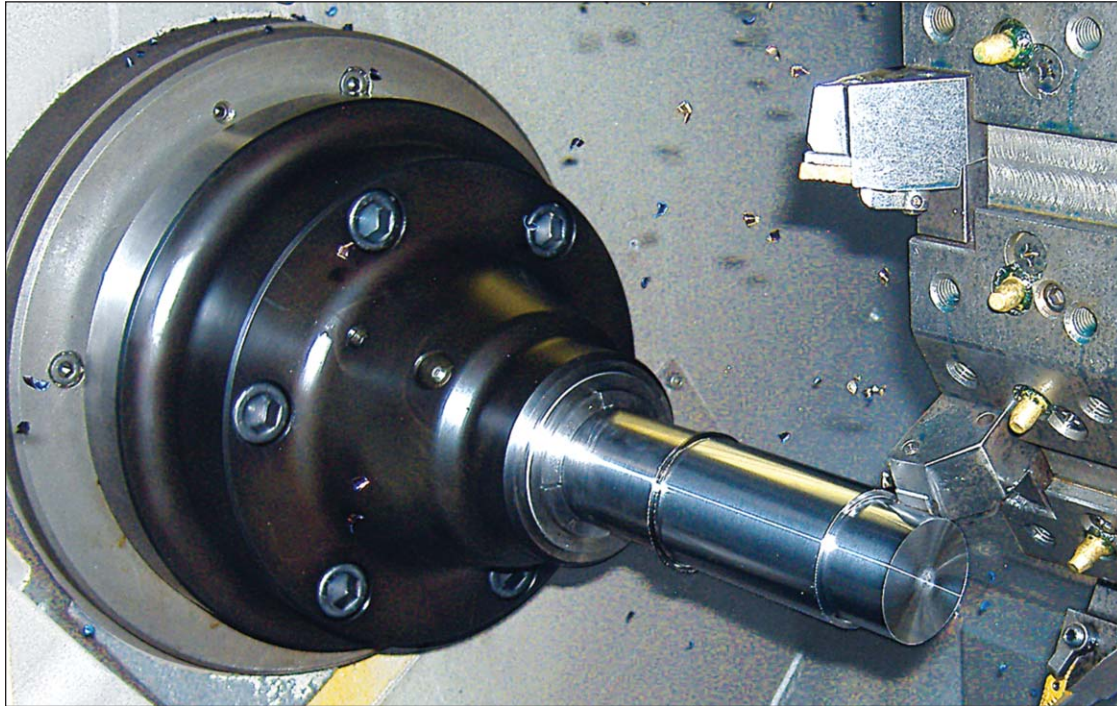
Heavy-Duty Collet Wrenches



- Heavy-duty one-piece head – pins won't shear off.
- Comfortable knurled handle offers superior grip and makes collet installation a breeze.
- Cross-drilled hole in handle allows a screwdriver to be used as a lever for hard-to-remove collets.
- Available for all popular collet models.

Royal Heavy-Duty Collet Wrenches

COLLET STYLE	NUMBER OF COLLET SLOTS	PART NUMBER	PRICE
5C	3	45187	\$110
16C/3J	3	45188	110
16C/3J	4	45189	110
S-20 Master	3	45190	153
S-26 Master	4	45191	153
S-30 Master	4	45192	153
S-40 Master	4	45193	229



When is a Collet Chuck a Better Choice than a Three-Jaw Chuck?

Bar Feeding

A collet chuck is almost always the best workholding choice for machines equipped with bar feeders. Collet chucks help minimize vibration, open and close faster than three-jaw chucks, and, most importantly, provide full 360° contact to ensure that the **bar stock remains on centerline for accurate re-gripping** after being advanced.

Small Diameter Work

Collet chucks are best suited for parts ranging in size from 1/16" to 3-1/2" in diameter because they offer much better tool clearance, can be run at higher speeds than jaw chucks, and provide superior grip force.

Short / Thin Parts

A collet chuck's low-profile design provides better tool clearance and allows machining to take place very close to the chuck face. This ability to work closer to the chuck can also help prevent thin parts from sagging or bending.

High Speed Operation

Collet chucks are much less vulnerable to the negative effects of centrifugal force, enabling them to **run at higher speeds while maintaining consistent grip force**.

Reduced Setup Times

Changing a collet is much faster than changing chuck jaws, and there is no boring required. Collet chucks keep your machines making chips – and profits!

Pipe and Tube Work

The 360° contact provided by a collet **distributes the gripping force evenly** around the entire part circumference, reducing the risk of crushing or distorting thin-walled parts.

Odd Shaped Parts

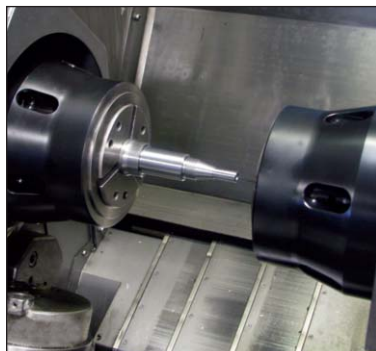
Collets can be easily customized to hold odd-shaped or off-center parts. A wide selection of standard collets is readily available to handle round, square, and hex stock.

Better Tool Life

The paddlewheel-like shape of a 3-jaw chuck can deflect coolant before it reaches the cutting tool tip, shortening tool life, whereas the streamlined shape of a collet chuck enables precise coolant delivery.

Increase Productivity and Profits with a Royal CNC Collet Chuck!

What is the Difference Between a Pullback Chuck and an Accu-Length™ Chuck?



With a pullback collet chuck, closing the collet is accomplished by pulling it back into the chuck body, whereas with an Accu-Length™ chuck, the collet is rigidly fixed to the chuck body and a tapered sleeve pushes forward over the collet to compress it.

Using a pullback chuck will result in a slight variation in z-axis positioning of the workpiece. This happens due to the fact that as the collet draws back and closes down, it begins to grip the workpiece and pull it back too. Typically the movement is just a few thousandths of an inch, and remains consistent as long as the part diameter doesn't vary.

This slight z-axis movement is often acceptable for first operation work and can be easily remedied with a facing cut. However, there are several situations where Z-axis movement is not desirable. In these cases, using a Royal Accu-Length™ collet chuck with **dead length operation will protect against workpiece movement.**

Important – For machines with two spindles, it is always necessary for the secondary spindle (right-hand) to be equipped with an Accu-Length™ collet chuck, and it is strongly recommended that the main spindle (left-hand) use an Accu-Length™ chuck as well.

Which Chuck Model is Right for You?

- Step 1** Determine the correct spindle mount, (A2-6, 140 mm, etc.). The collet chuck you choose must have the same spindle mount as your machine.
- Step 2** Determine the required capacity. It is usually common practice for the collet chuck capacity to either match, or slightly exceed, the machine's bar capacity.
- Step 3** Choose between Accu-Length™ and Pullback models

	Accu-Length	Pullback
Simple first-op turning*	✓*	✓*
Bar feeding*	✓*	✓*
Jobs where the workpiece OD or stock size is not consistent	✓	
Secondary operations, especially when an accurate length feature must be maintained in relation to first-op features	✓	
All secondary spindles (and main spindles of two-spindle machines)	✓	
Multiple pulls on the same part	✓	

*While both pullback and Accu-Length™ chucks may be used in these applications, Accu-Length™ is often a better choice and must be chosen if any of the other parameters are met.

- Step 4** Choose between Quick-Grip™ and Low-Profile models

	Quick-Grip™	Low-Profile
Fast collet changeover time	✓	
Short length	✓	
Small nose diameter	✓	✓
High grip force	✓	✓
Highest Accuracy	✓	
Wide clamping range	✓	

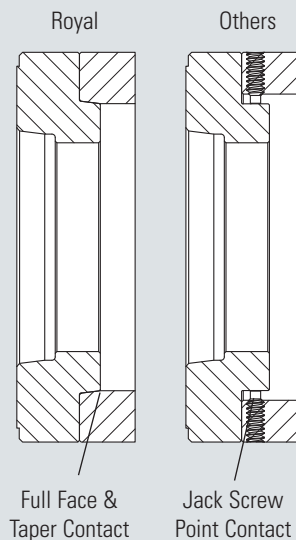
For additional help in determining which collet chuck model is best suited to your specific needs, please contact a Royal Products applications engineer at 1-800-645-4174.

Superior Design Features



- ❑ All Royal CNC collet chucks have been optimized for maximum tool clearance and outstanding rigidity.
- ❑ Exclusive Bolt & Go™ Mounting Feature – **Dead On, Dead Accurate – Every Time!** See below for additional information.
- ❑ The closing sleeve connection on our Accu-Length™ models ensures zero backlash – a common problem on competitive chucks.
- ❑ Lubrication – All Royal Low-Profile Accu-Length™ chuck models include spiral grease channels on the closing sleeve for superior lubrication and longer life.
- ❑ Extremely close-fitting components and multiple o-ring seals make Royal CNC collet chucks the best sealed chucks available.
- ❑ Royal manufactures and stocks a wide range of adapter plates, stops, ejectors, and sealing devices so we can quickly and easily meet customer requirements.

Exclusive Royal Bolt & Go™ Mounting Advantage Because Your Time is Valuable!



All Royal CNC Collet Chucks mount quickly, easily, and accurately due to our exclusive Bolt & Go™ mounting interface.

Many Royal chuck models mount directly to the lathe spindle without the need for an adapter plate. However, for models that do use a plate, a precision-ground tapered fit between the plate's male pilot and chuck body's female recess **ensures a consistent, near-perfect fit without the need for any adjustment.** This precision fit also enhances overall system rigidity by providing both face and taper contact.

Other chuck manufacturers use a less precise approach. Instead of providing a near-perfect tapered interface between the chuck body and plate, they rely on a loose fit between a male cylindrical pilot on the plate and an oversized bore within the chuck body. Because there is clearance between these two components, jack screws located around the circumference must be used to radially true-up the chuck on the plate. This process of using the jack screws and an indicator to dial out the runout each time a chuck is mounted wastes valuable production time. The rigidity of this design is also significantly less due to the limited point-contact provided by the screws against the pilot as compared to the full-contact tapered fit of the Royal Bolt & Go™ interface.

Knock 30 Minutes Off Your Setup Time with Royal Bolt & Go™

WHY CHOOSE ROYAL CNC COLLET CHUCKS?



Precision-Made in USA

ISO 9001: 2008 Certified

- Every Royal CNC collet chuck and master collet is completely manufactured in our modern factory on state-of-the-art automated CNC equipment.
- All chucks, sleeves, adapter plates, collets, etc., come off of our gantry-loaded multi-tasking machines complete – eliminating the accuracy and quality issues often associated with multiple setups/operations.
- All grinding takes place on precision Swiss-made CNC grinders that enable multiple features to be ground in a single setup, resulting in near-perfect tolerances and **ensuring absolute consistency from part to part.**
- Royal Products is an ISO9001-2008 registered company dedicated to continuous improvement. Every process is documented and followed down to the smallest detail for consistent quality – every time.



Same-Day Shipping



Our product availability is second to none. Over **94% of all Royal CNC collet chucks ship complete the same day they are ordered**, and the remainder ship either the next day, or as specified by the customer.

We stock more than 700 chucks at any given time to ensure that we will always have what our customers need, when they need it.

Outstanding Support



Royal maintains a fleet of fully-equipped mobile showrooms designed to bring solutions to our customers' doorsteps. To schedule a visit to your company, please call 1-800-645-4174.

- Royal's knowledgeable team of applications engineers makes it very easy for you to do business with us. When you call Royal, the person you speak with will be a workholding expert, and if we can't offer you the best solution for your application, we'll do our best to recommend a company that can – even if it's competitor!
- Royal CNC Collet Chucks are sold through a **select network of the country's top industrial and machine tool distributors.** We also have strong relationships with all of the major machine tool builders and importers to make sure that our products seamlessly interface with their machines.
- With over forty factory-trained account managers strategically located throughout North America, our highly-qualified field support team is always ready and willing to serve you.

WHY CHOOSE ROYAL CNC COLLET CHUCKS?

We Make It Easy

- ❑ All chucks include everything needed for installation, (even the wrenches). We strive to give our customers “the mint on the pillow” treatment.
- ❑ Through the past thirty years of gathering machine tool specifications and working closely with all of the major machine tool builders, Royal Products has developed a huge database of drawtube specifications, virtually eliminating the need for a customer to ever measure a machine.
- ❑ We now stock over 120 of the most common drawtube connector models, and non-stock connectors are made very quickly from semi-finished blanks.
- ❑ All Royal CNC collet chucks come packaged in specially designed heavy-gage boxes with form-fitting foam inserts to provide complete protection of all contents.



Risk-Free Performance Guarantee

In addition to providing superior quality, service, support, and deliveries, Royal CNC Collet Chucks also carry an industry exclusive risk-free performance guarantee. This no-risk guarantee allows our customers to run a collet chuck on the toughest jobs in their shop for 45-days, and if they are not 100% satisfied with its performance, we will take it back and arrange for a full refund through their distributor.

When you buy a CNC collet chuck from Royal Products, you can have **complete confidence** that we will not let you down. For over 65 years, Royal has been recognized as one of the most reliable and trusted suppliers in the metalworking industry. We're here for you today, and we'll be here for you tomorrow.

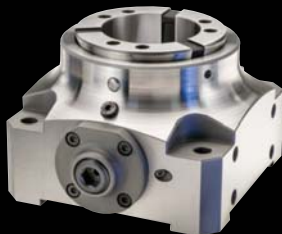
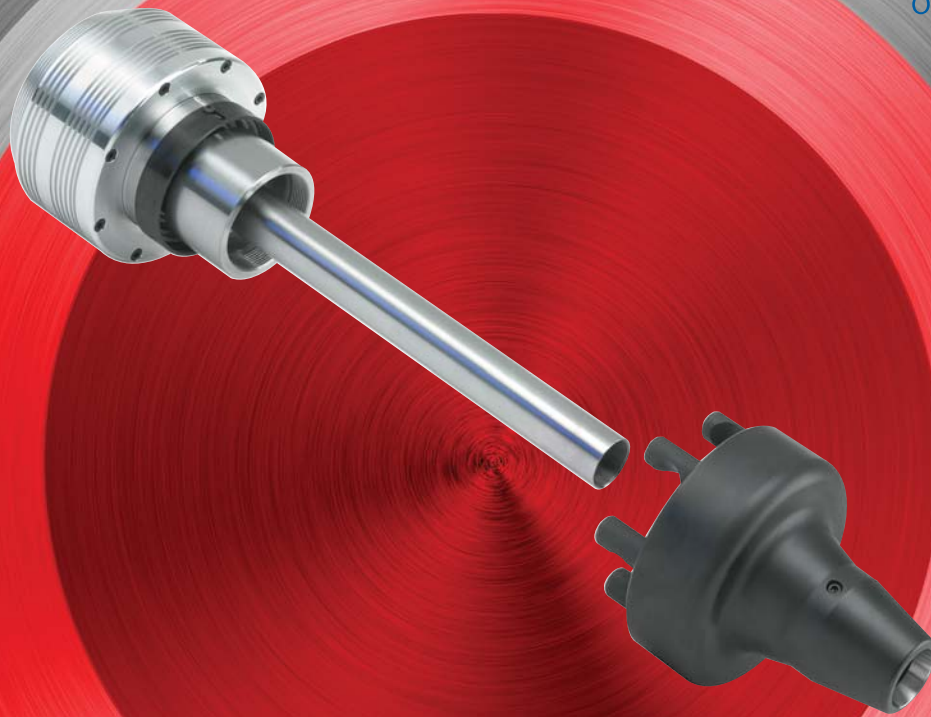
- ✓ Smarter Design
- ✓ Better Quality
- ✓ Outstanding Support

**Risk-Free
PERFORMANCE
Guarantee**

- ✓ Same-Day Shipping
- ✓ No Hassles
- ✓ Risk-Free Guarantee



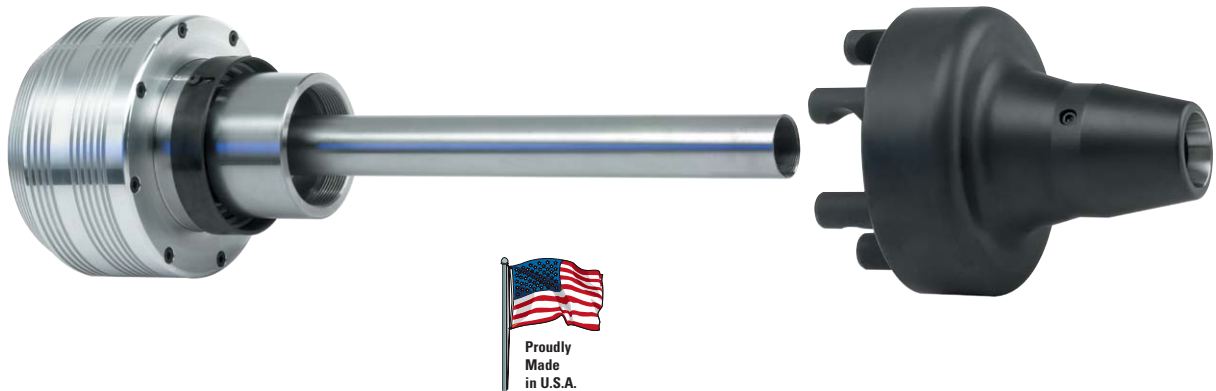
**Check out the Royal Quick-Grip™ CNC Collet
Chuck Video at www.colletchucks.com**



COLLET CLOSERS, FIXTURES AND COLLETS

FOR ROTATING AND FIXED APPLICATIONS

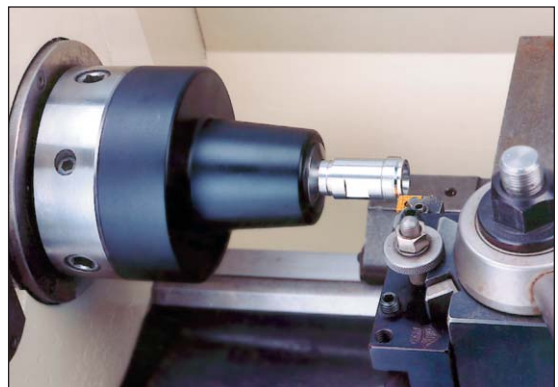
5C PNEUMATIC COLLET CLOSER FOR MANUAL LATHES & GRINDERS



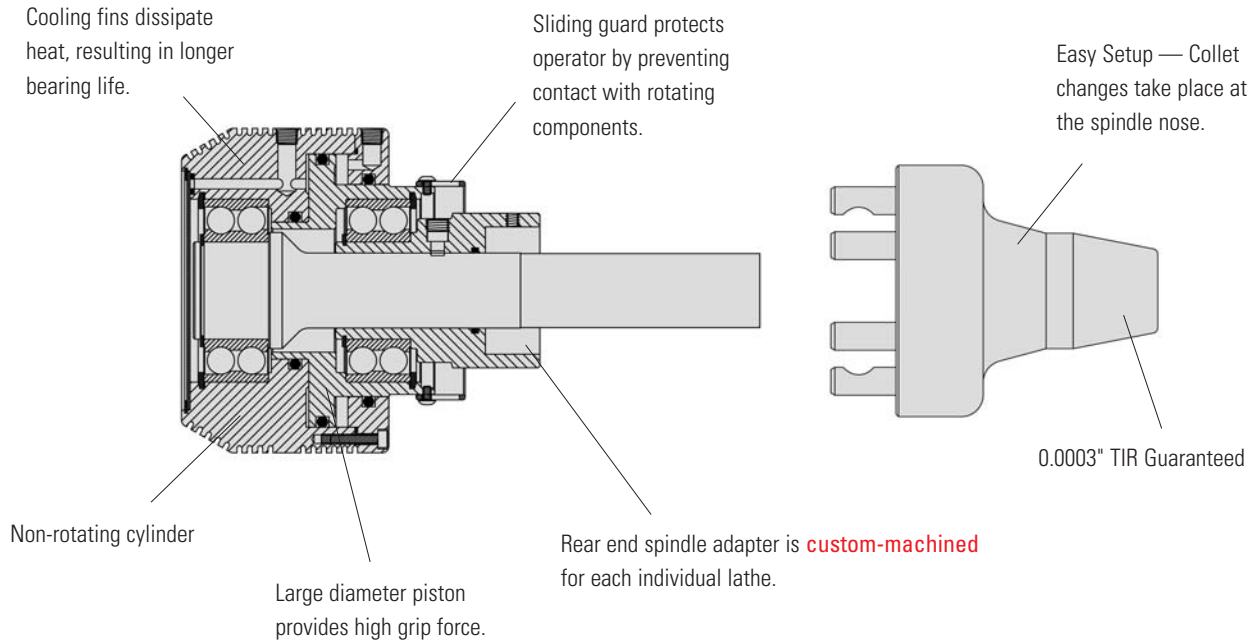
- ❑ The Royal 5C pneumatic collet closer enables 5C collets to be used on any manual lathe or workhead.
- ❑ This new model, based upon Royal's 65 years of collet closer experience, has been designed for heavy use under the most demanding manufacturing conditions.
- ❑ Fast opening/closing action makes the Royal pneumatic collet closer a great choice for **high production** applications.
- ❑ Closer is very easy to actuate, resulting in minimal worker fatigue and maximum productivity.
- ❑ The air cylinder incorporates a large diameter piston, providing strong grip force on the workpiece.
- ❑ Royal 5C Pneumatic Collet Closer incorporates several modern safety features designed to help shops meet **OSHA and NIOSH** requirements. Unlike other collet closers, there are no exposed rotating parts on the outboard side of the machine.
- ❑ Pneumatic collet closer assembly includes air cylinder, custom-machined rear end spindle adapter, drawtube, and cam-lock collet adapter. Air controls sold separately.

Drawtube Capacity (in.)	1.06
Cylinder O.D. (in.)	5.94
Max. Operating Speed (rpm)*	4,000*
Max. Air Pressure (psi)	90
Piston Surface Area (sq. in.)	14.72
Max. Drawtube Force (lbs.)	1,325
Max. Clamping Force (lbs.)	4,520

* For continuous operation above 3,000 rpm we recommend reducing air pressure to 60 psi max.



5C PNEUMATIC COLLET CLOSER FOR MANUAL LATHES & GRINDERS



Royal collet closers are well-suited for use in fourth and fifth-axis workholding applications.

Royal 5C Pneumatic Collet Closer Assembly

FOR LATHES WITH SPINDLE NOSE TYPE	PART NUMBER	PRICE
A-3 or D1-3	17200	\$2,629
A-4 or D1-4	17201	2,755
A-5 or D1-5	17202	3,028
A-6 or D1-6	17203	3,299
A-8 or D1-8	17204	3,757
Haas TL-1*	In-Stock – Call Royal for Part Number and Pricing	
Haas TL-2*	In-Stock – Call Royal for Part Number and Pricing	

* Haas TL-1 and TL-2 are registered trademarks of Haas Automation, Inc.

Order Air Controls Separately



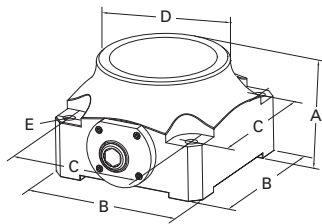
DESCRIPTION	PART NUMBER	PRICE
Air Control Kit w/Hand Valve	16001	\$386
Air Control Kit w/Foot Valve	16002	609

MANUAL COLLET FIXTURES FOR 4TH AND 5TH AXIS APPLICATIONS



NEW

- Unit is actuated via a hybrid mechanical/hydraulic mechanism.
- Can be used in both stationary and rotary table applications. **Caution – not for use on lathes or grinders above 5 rpm!**
- Many of the same great features as our Quick-Grip™ CNC Collet Chucks, including ten-second collet changes and parallel-grip collets with a full .062" clamping range.
- Pullback design with an internally threaded back plate enables the use of a stop rod.
- Bottom and all four sides are ground for both vertical and horizontal mounting.
- Ideal for high production 4th and 5th axis applications.**
- For use with Royal Quick-Grip™ collets (pages 16-19).



Royal Quick-Grip™ Manual Collet Fixtures

MODEL	CAPACITY	A	B	C	D	E	PART NUMBER	PRICE*
QG-42	1.63"	3.94	5.12	3.94	3.94	0.43	43900	\$2,843
QG-65	2.63"	3.94	5.91	4.92	4.72	0.43	43904	3,019
QG-80	3.25"	4.33	6.50	5.31	5.31	0.51	43908	4,153

*Collet not included – order separately.

5C, 16C, & 3J MANUAL COLLET FIXTURES



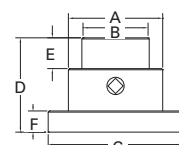
- Opened and closed via an internal cam mechanism.
- Accu-Length™ operation – collet and workpiece position remains fixed for precise length control.
- Can be used in both **stationary and rotary table applications**. **Caution – not for use on lathes or grinders above 5 rpm!**
- Special model 62004 bolts directly to Haas HRT-110* and other small indexers.
Note – cam bolt is recessed on this model.
- All other models configured for both four and six-slot mounting – 4.125" bolt circle diameter.
- Custom face plates available – contact Royal.
- All models include cam wrench.

Royal 5C, 16C and 3J Manual Collet Fixtures

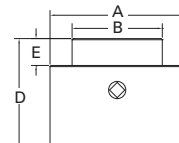
MODEL	CAPACITY	TYPE	A	B	C	D	E	F	PART NUMBER	PRICE
5C	1 1/16"	Type 1	3.37	2.50	4.95	3.50	1.15	0.75	62002	\$712
5C (for HRT-110)*	1 1/16"	Type 2	4.20	2.50	–	3.50	1.15	–	62004	712
16C	1 5/8"	Type 2	4.95	3.35	–	4.63	1.50	–	62006	1,094
3J	1 3/4"	Type 2	4.95	3.35	–	4.13	1.00	–	62008	1,094

*Haas and HRT-110 are registered trademarks of Haas Automation, Inc.

Type 1



Type 2



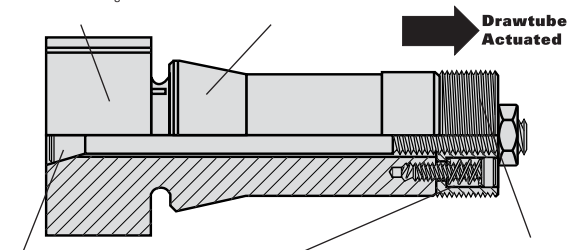
5C EXPANDING COLLETS

- ❑ Unlike chucks and most collets that grip the OD of a workpiece, 5C expanding collets are designed to grip on the ID of a part.
- ❑ Accu-length design ensures **precise workpiece positioning** — no z-axis movement.
- ❑ Collet head is easily machined to required size. Can be re-machined as necessary.
- ❑ Concentricities of $\pm 0.0002"$ can typically be achieved using Royal 5C expanding collets.
- ❑ Made from 1144 steel that can be hardened after machining for wear resistance.
- ❑ Additional head lengths and diameters available. Contact us for information.



Head is easily machined to required size by customer. See chart for range.

Precision ground body for excellent workpiece concentricity.



Expanding rod is hardened and ground for strength and durability.

Internal spring provides positive release.

Rear threaded section is separate from collet body. When this section is pulled back by the drawtube, it pulls the tapered expanding rod back, causing the head to expand.

Royal 5C Internal Expanding Collets

NOMINAL HEAD DIAMETER	HEAD LENGTH	MACHINABLE RANGE MIN-MAX	PART NUMBER	PRICE
3/4"	1"	1/4" - 1 1/16"	20100	\$135
1"	1"	7/16" - 1 5/16"	20101	135
1 1/2"	1"	3/4" - 1 7/16"	20102	128
1 1/2"	1 1/2"	3/4" - 1 7/16"	20103	141
1 1/2"	2"	3/4" - 1 7/16"	20104	142
2"	1"	3/4" - 1 5/16"	20107	148
2"	1 1/2"	3/4" - 1 5/16"	20108	157
2"	2"	3/4" - 1 5/16"	20109	179
2 1/2"	1"	3/4" - 2 7/16"	20112	182
3"	1"	3/4" - 2 15/16"	20117	199
5"	2"	3/4" - 4 15/16"	20127	384
6"	2"	3/4" - 5 15/16"	20128	426



Replacement Expanding Rods

HEAD DIA.	HEAD LENGTH	PART NUMBER	PRICE
3/4"	1"	20135	\$40
1"	1"	20136	36
1 1/2" - 6"	1"	20130	28
1 1/2" - 6"	1 1/2"	20131	29
1 1/2" - 6"	2"	20132	30

5C STEP COLLETS



- ❑ Royal step collets allow large diameter parts to be held in a 5C collet.
- ❑ Head can be easily bored out by customer to required size.
- ❑ Three dowel pins are supplied to **ensure accurate machining**.
- ❑ 1/4" thick head allows for 1" bore depth.
- ❑ Collets are made from 1144 steel and can be hardened for wear resistance.

Royal 5C Step Collets

HEAD DIA.*	PILOT HOLE	PIN DIA.	PART NUMBER	PRICE
2"	1/4"	1/8"	20020	\$141
3"	5/16"	1/4"	20022	186
4"	5/16"	1/4"	20024	290
5"	5/16"	1/4"	20025	375
6"	5/16"	1/4"	20026	485

*We recommend ordering a collet with a head diameter at least 1/2" larger than workpiece diameter.

Note — these step collets close on the 10° angle, not the head OD. When using, be sure part is sufficiently clamped.

Royal Sets a Higher Standard for ER Collets

Extremely Accurate

Runout is guaranteed to be 6 microns (**0.0002"**) TIR, or better. Each collet is inspected to this standard prior to shipping.

Versatile

Available in both **sealed and standard versions**.

Wide Gripping Range

Royal standard ER Collets contain 16 slots, providing a larger gripping range than other brands.



Heavy Duty Construction

Royal ER Collets are made from high-grade steels imported from Germany and are hardened for long life.

Great Value

Very **competitive prices** make these high-quality ER Collets the best value in the industry.

Large Inventory

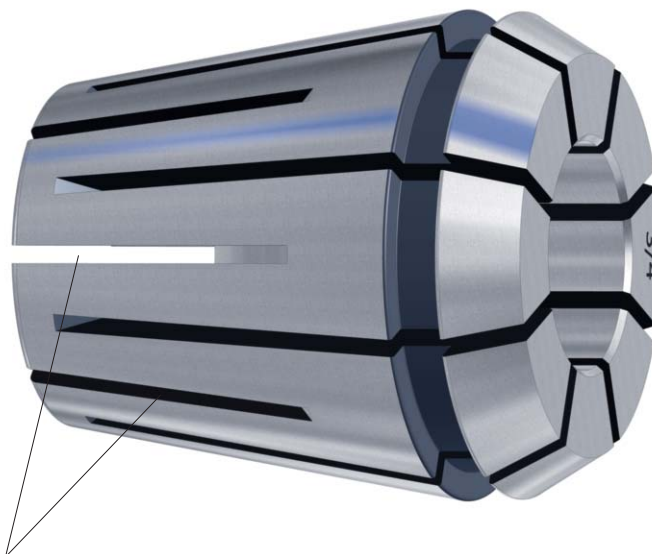
All sizes are **in stock**, ready for immediate shipment.

Inch and Metric Sizes

Royal ER Collets are available in both **inch and metric sizes**. This optimizes the surface contact between the collet and cutting tool and results in higher accuracies, stronger grip force, better part finishes, and longer cutting tool life.

SEALED ULTRA-PRECISION ER COLLETS

- ❑ Ultra-Precision Accuracy – 0.0002" TIR guaranteed.
- ❑ **High-pressure approved to 1400 psi.**
- ❑ Unique design is mechanically sealed by virtue of the rear slots terminating prior to the annular groove, completely blocking the path of coolant flow to the front of the collet.
- ❑ When using thru-coolant cutting tools, these collets ensure **100% coolant delivery** to the tip of the cutting tool.
- ❑ Superior to collets sealed with silicone/rubber plugs because the plugs are limited to lower operating pressures and are subject to wear.
- ❑ Unlike standard ER collets, sealed models do not have a wide collapsibility range, requiring the collet bore to be matched to the cutting tool shank diameter.

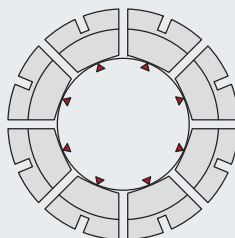


Short slots block flow, ensuring that all coolant is delivered thru the cutting tool.

A Perfect Match to Your Cutting Tool Diameter

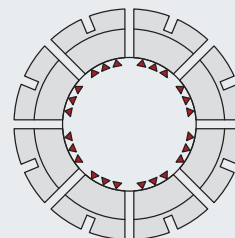
All Royal ER Collets are available from stock in both inch and metric sizes. This is very important because it enables you to select a collet that has been ground to your precise cutting tool size.

Using a collet that is **perfectly matched to the cutting tool diameter** ensures that full surface contact is achieved, resulting in higher gripping force, better accuracy, less vibration, better surface finishes, and longer tool life.



Other Brands

Single Point Contact when Using Metric Collets to Hold Inch-Sized Tooling, or Vice Versa



Royal Brand

Full Surface Contact Because Royal ER Collets are Ground to Exact Inch and Metric Sizes

ULTRA-PRECISION ER COLLETS – 0.0002" TIR

Standard and Sealed

Inch Sizes



ER-11
\$27 / \$30



ER-16
\$27 / \$30



ER-20
\$30 / \$35



ER-25
\$32 / \$37



ER-32
\$34 / \$41



ER-40
\$37 / \$47

Royal Ultra-Precision ER Collets (Inch)

DRILL/ENDMILL DIAMETER	STANDARD COLLET GRIP RANGE*	ER-11*		ER-16		ER-20		ER-25		ER-32		ER-40	
		Standard \$27	Sealed \$30	Standard \$27	Sealed \$30	Standard \$30	Sealed \$35	Standard \$32	Sealed \$37	Standard \$34	Sealed \$41	Standard \$37	Sealed \$47
1/16"	.062 – .043	53002		53020		53050		53090					
3/32"	.093 – .054	53004		53022		53052		53092		53140			
1/8"	.125 – .086	53006	56006	53024	56024	53054	56054	53094	56094	53142		53200	
5/32"	.156 – .117	53008	56008	53026	56026	53056	56056	53096	56096	53144	56144	53202	56202
3/16"	.187 – .148	53010	56010	53028	56028	53058	56058	53098	56098	53146	56146	53204	56204
7/32"	.218 – .179	53012	56012	53030	56030	53060	56060	53100	56100	53148	56148	53206	56206
1/4"	.250 – .211	53014	56014	53032	56032	53062	56062	53102	56102	53150	56150	53208	56208
9/32"	.281 – .242			53034	56034	53064	56064	53104	56104	53152	56152	53210	56210
5/16"	.312 – .273			53036	56036	53066	56066	53106	56106	53154	56154	53212	56212
11/32"	.343 – .304			53038	56038	53068	56068	53108	56108	53156	56156	53214	56214
3/8"	.375 – .336			53040	56040	53070	56070	53110	56110	53158	56158	53216	56216
13/32"	.406 – .367			53042	56042	53072	56072	53112	56112	53160	56160	53218	56218
7/16"	.437 – .398					53074	56074	53114	56114	53162	56162	53220	56220
15/32"	.468 – .429					53076	56076	53116	56116	53164	56164	53222	56222
1/2"	.500 – .461					53078	56078	53118	56118	53166	56166	53224	56224
17/32"	.531 – .492							53120	56120	53168	56168	53226	56226
9/16"	.562 – .523							53122	56122	53170	56170	53228	56228
19/32"	.593 – .554							53124	56124	53172	56172	53230	56230
5/8"	.625 – .586							53126	56126	53174	56174	53232	56232
21/32"	.656 – .617									53176	56176	53234	56234
11/16"	.687 – .648									53178	56178	53236	56236
23/32"	.718 – .679									53180	56180	53238	56238
3/4"	.750 – .711									53182	56182	53240	56240
25/32"	.781 – .742									53184	56184	53242	56242
13/16"	.812 – .773									53186	56186	53244	56244
27/32"	.843 – .804											53246	56246
7/8"	.875 – .836											53248	56248
29/32"	.906 – .867											53250	56250
15/16"	.937 – .898											53252	56252
31/32"	.969 – .930											53254	56254
1"	1.000 – .961											53256	56256

* Grip Range for ER-11 is 1/64". Sealed collets have no range – must be sized exactly.

ULTRA-PRECISION ER COLLETS – 0.0002" TIR

Standard and Sealed

Metric Sizes



ER-11

\$27 / \$30



ER-16

\$27 / \$30



ER-20

\$30 / \$35



ER-25

\$32 / \$37



ER-32

\$34 / \$41



ER-40

\$37 / \$47

Royal Ultra-Precision ER Collets (Metric)

DRILL/ENDMILL DIAMETER	STANDARD COLLET GRIP RANGE*	ER-11*		ER-16		ER-20		ER-25		ER-32		ER-40	
		Standard \$27	Sealed \$30	Standard \$27	Sealed \$30	Standard \$30	Sealed \$35	Standard \$32	Sealed \$37	Standard \$34	Sealed \$41	Standard \$37	Sealed \$47
1 mm	1 – 0.5	53402		53430									
2 mm	2 – 1	53404		53432		53460		53502					
3 mm	3 – 2	53406	56406	53434	56434	53462	56462	53504	56504	53550			
4 mm	4 – 3	53408	56408	53436	56436	53464	56464	53506	56506	53552	56552	53602	56602
5 mm	5 – 4	53410	56410	53438	56438	53466	56466	53508	56508	53554	56554	53604	56604
6 mm	6 – 5	53412	56412	53440	56440	53468	56468	53510	56510	53556	56556	53606	56606
7 mm	7 – 6	53414	56414	53442	56442	53470	56470	53512	56512	53558	56558	53608	56608
8 mm	8 – 7			53444	56444	53472	56472	53514	56514	53560	56560	53610	56610
9 mm	9 – 8			53446	56446	53474	56474	53516	56516	53562	56562	53612	56612
10 mm	10 – 9			53448	56448	53476	56476	53518	56518	53564	56564	53614	56614
11 mm	11 – 10					53478	56478	53520	56520	53566	56566	53616	56616
12 mm	12 – 11					53480	56480	53522	56522	53568	56568	53618	56618
13 mm	13 – 12					53482	56482	53524	56524	53570	56570	53620	56620
14 mm	14 – 13							53526	56526	53572	56572	53622	56622
15 mm	15 – 14							53528	56528	53574	56574	53624	56624
16 mm	16 – 15							53530	56530	53576	56576	53626	56626
17 mm	17 – 16									53578	56578	53628	56628
18 mm	18 – 17									53580	56580	53630	56630
19 mm	19 – 18									53582	56582	53632	56632
20 mm	20 – 19									53584	56584	53634	56634
21 mm	21 – 20											53636	56636
22 mm	22 – 21											53638	56638
23 mm	23 – 22											53640	56640
24 mm	24 – 23											53642	56642
25 mm	25 – 24											53644	56644
26 mm	26 – 25											53646	56646

* Grip Range for ER-11 is 0.5 mm. Sealed collets have no range – must be sized exactly.

ULTRA-PRECISION ER COLLET SETS

Standard and Sealed



- 0.0002" TIR guaranteed.
- Convenient sets include all popular sizes.
- Available in inch, metric, standard, and sealed models.

Royal ER Collet Sets (Inch – Standard)

COLLET SERIES	RANGE	NUMBER OF COLLETS IN SET	PART NUMBER	PRICE
ER-11	1/16"–1/4" x 32nds	7	53300	\$189
ER-16	1/16"–3/8" x 32nds	11	53302	297
ER-20	5/32"–1/2" x 32nds	12	53304	360
ER-25	5/32"–5/8" x 32nds	16	53306	512
ER-32	7/32"–3/4" x 32nds	18	53308	612
ER-40	1/8"–1" x 16ths	15	53310	555

Royal ER Collet Sets (Metric – Standard)

COLLET SERIES	RANGE	NUMBER OF COLLETS IN SET	PART NUMBER	PRICE
ER-11	1–7 mm x 1 mm	7	53700	\$189
ER-16	1–10 mm x 1 mm	10	53702	270
ER-20	2–13 mm x 1 mm	12	53704	360
ER-25	2–16 mm x 1 mm	15	53706	480
ER-32	3–20 mm x 1 mm	18	53708	612
ER-40	4–26 mm x 1 mm	23	53710	851

Royal ER Collet Sets (Inch – Sealed*)

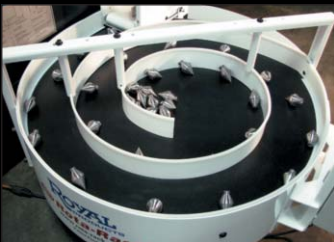
COLLET SERIES	RANGE	NUMBER OF COLLETS IN SET	PART NUMBER	PRICE
ER-16	1/8"–3/8" x 32nds	9	56302	\$270
ER-20	5/32"–1/2" x 32nds	12	56304	420
ER-25	5/32"–5/8" x 32nds	16	56306	592
ER-32	7/32"–3/4" x 32nds	18	56308	738
ER-40	3/16"–1" x 16ths	14	56310	658

* Unlike standard ER collets, sealed models do not have a wide collapsibility range and therefore must be sized to the cutting tool diameter.

Royal ER Collet Sets (Metric – Sealed*)

COLLET SERIES	RANGE	NUMBER OF COLLETS IN SET	PART NUMBER	PRICE
ER-16	3–10 mm x 1 mm	8	56702	\$240
ER-20	3–13 mm x 1 mm	11	56704	385
ER-25	3–16 mm x 1 mm	14	56706	518
ER-32	4–20 mm x 1 mm	17	56708	697
ER-40	4–26 mm x 1 mm	23	56710	1,081

* Unlike standard ER collets, sealed models do not have a wide collapsibility range and therefore must be sized to the cutting tool diameter.



 **Rota-Rack**TM

**OFF-THE-SHELF AUTOMATION INCREASES
THROUGHPUT AND PROFITS**

WHAT IS A ROTA-RACK®?



The patented Royal Rota-Rack® is an automatic accumulator that can be used with any bar-fed CNC lathe to safely collect finished parts, providing **hours of highly profitable, unmanned production.**

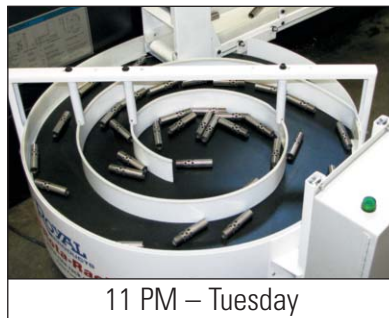
Do you know....

- There are 168 production hours in a week.
- You are probably only using 40 of them.
- Your machines are worth \$100 per hour.
- You could be **making an extra \$12,800 per week** on each machine with a Rota-Rack®.
- You already invested in the bar feeder – how can you not complete the automation package?
- **A one-week payback – Incredible!**
- What are you waiting for?

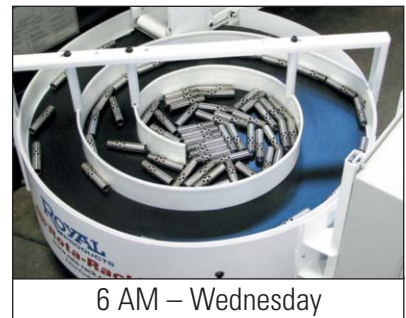
Overnight Production = Pure Profit



5 PM – Tuesday



11 PM – Tuesday



6 AM – Wednesday

HOW DOES THE ROTA-RACK® WORK?

The Royal Rota-Rack® is very simple to setup and operate. Here's how it works:

1



User enters the part cycle time and degree of turntable rotation via a simple PLC controller. A counter can also be set to shut the Rota-Rack® down after a specified number of parts have been collected.

2



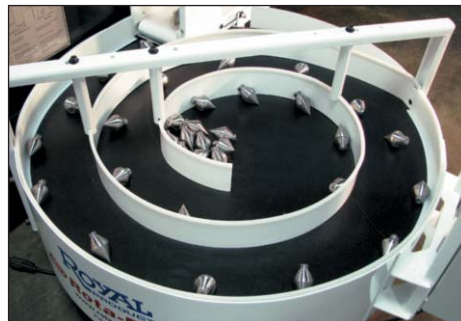
As a finished part comes out of the lathe, it drops onto the conveyor and is moved towards the Rota-Rack's® rotating turntable.

3



Each time a part comes out of the machine, the Rota-Rack® indexes to the next position. The degree of turntable rotation is easily adjusted according to part length.

4



As the turntable indexes, the parts are gently guided towards the center via the spiral.

5



After several hours of unmanned production, finished parts are manually removed from the center of the Rota-Rack®.

Note: For even greater simplicity, a basic "always-on" control is also available. See page 45.



Check out the Royal Rota-Rack® Video at www.rotarack.com

WHAT WILL ROTA-RACK® DO FOR YOU?

Big Benefit #1 Increases Capacity, Throughput, and Profits

Adding a Royal Rota-Rack® to a bar-fed CNC lathe greatly increases machine utilization and throughput.

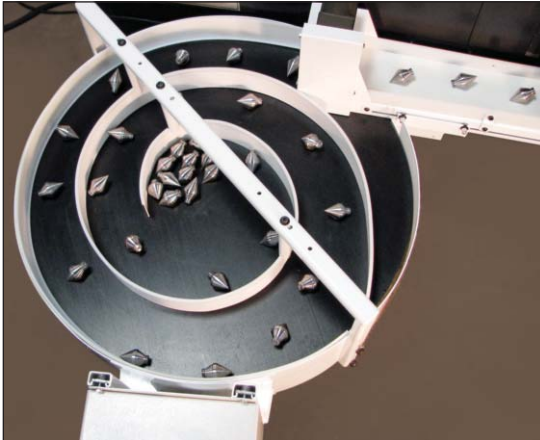
- ❑ Run existing machines extra hours: nights, weekends, lunch breaks, etc.
- ❑ Faster cycle times – no waiting for an operator to unload parts / empty collection boxes.
- ❑ Higher efficiency – **produce more parts per shift.**
- ❑ Better employee utilization – why have a person do a job that can be handled with simple automation?
- ❑ Increased profitability.



Note: Collection box removed for clarity.

Big Benefit #2 Eliminates Part Damage

The Royal Rota-Rack® has been designed to provide maximum part protection, a feature that is important for all parts but one that is especially useful for parts with delicate external features like threads, edges, and corners.



- ❑ Each time the Rota-Rack® collects a finished part, the turntable smoothly rotates to the next position to ensure that the following part will not forcefully collide with any of the previously-collected parts.
- ❑ All contact surfaces of the Royal Rota-Rack® and conveyor are covered with a high-lubricity UHMW plastic material to minimize friction and protect surface finishes.
- ❑ **Reducing scrap and rework costs directly improves profitability.**
- ❑ The Rota-Rack's® unique spiral helps keep finished parts in sequential order, aiding in quality control/inspection.

Big Benefit #3 Provides Complete Reliability

The Royal Rota-Rack® won't show up late, doesn't get sick, and **keeps working long after your last employee leaves for the night or weekend.**

First day of hunting season? Big snow storm? Cousin wedding? The Rota-Rack® doesn't care. How many of your competitors will be turning out parts on Super Bowl Sunday?

Case Study – Royal Rota-Rack® Increased Profits at a Small Job Shop by Over \$50,000!

- ❑ The owner of a small job shop installed a Royal Rota-Rack® with the intention of running one of his CNC lathes for a few extra hours in the evenings after his employees left for the day.
- ❑ For costing purposes, he continued to base all of his overheads on the first shift, figuring that any extra production hours achieved with the Rota-Rack® would be virtually all profit.
- ❑ The shop rate on his CNC Lathe = \$70 per hour
- ❑ The owner started out conservatively, using Rota-Rack® to deliver just three hours of extra production per night.
- ❑ 3 hours x 5 days = 15 hours per week of extra production
- ❑ 15 x \$70 = \$1,050 in extra profits per week
- ❑ \$1050 x 52 weeks = \$54,600!

In this real-life example, the lathe only ran an average of three extra hours per night, and still **generated more than \$50,000 in extra profit in the first year** alone. In reality, many shops use the Royal Rota-Rack® to run an extra six to eight hours per night, plus weekends.



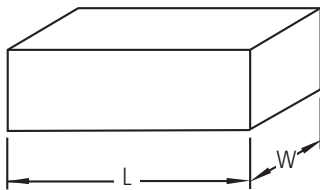
Utilized to its fullest extent, it is entirely possible to generate an **additional profit of \$150,000 – \$200,000** per lathe, per year, with the Royal Rota-Rack®.

Calculate Your Own Extra Production Potential

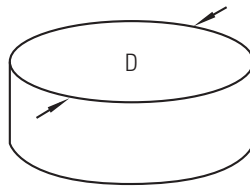
Use this handy worksheet to calculate how many extra hours you could run your CNC lathes completely unattended with the Royal Rota-Rack®

A. _____ Largest surface area of your part (multiply the two largest dimensions in inches)

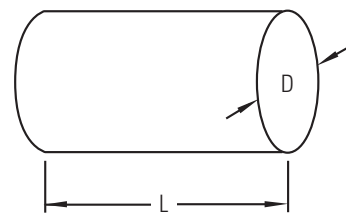
Examples:



Rectangle
(Length x Width)



Disk
(Diameter x Diameter)



Cylinder
(Length x Diameter)

B. _____ Number of parts that can fit on the Rota-Rack® = $(850 / A) \times 0.8$

Note – The 850 represents the usable surface area of the turntable in square inches, and the 0.8 assumes that when the parts are accumulated, 20% of the Rota-Rack's® surface area will remain vacant.

C. _____ Cycle time of part in minutes

D. _____ Number of parts that can be made in one hour $(60 / C)$

E. _____ Number of hours that machine can be run unattended (B / D)

F. _____ Shop rate of machine in dollars

G. _____ Additional profit per shift $(E \times F)$

H. _____ Number of shifts per week

I. _____ Extra yearly profit $(G \times H \times 52)$

With such a large potential return, you can't afford not to equip every bar-fed CNC lathe in your shop with a Royal Rota-Rack®!



**Check out the Royal Rota-Rack®
Video at www.rotarack.com**

SMART DESIGN – BUILT TO LAST

Large Capacity

With over 850 square inches of surface area, the Royal Rota-Rack® can hold **hundreds of parts*** and provide hours of unmanned operation.

Unique Rotary Spiral

Gently guides finished parts to the center as the turntable rotates.

Coolant Management

Integral drip tray with drain collects excess coolant.

Totally Self-Contained – No Machine Tool Contact

The Royal Rota-Rack® is a complete stand-alone unit – there are no electrical or physical connections of any type with the machine tool. This provides hassle-free installation and ensures that all machine warranties remain intact.



Very Heavy-Duty Construction

Weighing in at 450 lbs., the Royal Rota-Rack® is a serious piece of equipment that is **built to withstand years of abuse** in the harshest production environments. A heavy gage welded steel frame provides outstanding rigidity, enabling the Rota-Rack® to easily support up to 700 lbs. of finished parts.

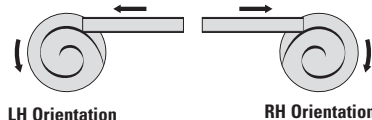
Excellent Part Protection

Low-friction UHMW coating on all contact surfaces protects finished parts from scuffs and dents. This durable plastic is the same material used in the manufacture of motorcycle chain guides.

Universal Design

The Royal Rota-Rack® **adapts to any CNC lathe** that is equipped with a part catcher:

- Turntable can rotate either clockwise or counter-clockwise, and can be positioned to either the left side or right side of the lathe



- Height range 10.5 – 53 inches. Other height requirements can be accommodated upon special request
- Rota-Rack® is completely free standing – no bolting to the machine or floor is required
- Control box can be positioned anywhere on circumference for optimal clearance
- Easily adapts to machines with existing conveyors

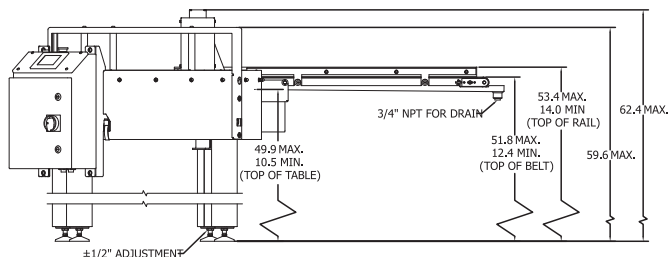
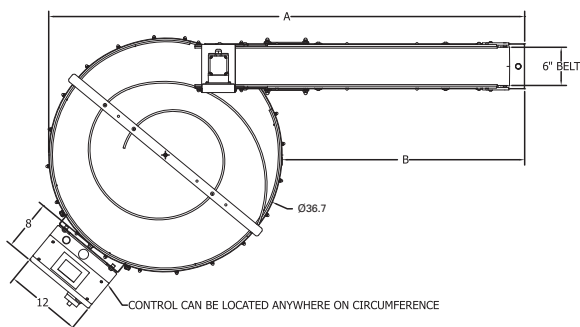
The Royal Rota-Rack® is reliable, doesn't take sick days, and **pays for itself within a few months of use. Order yours today and get a jump on your competition!**

*Actual number of parts depends upon individual part size.

HEAVY-DUTY ROTA-RACK® SPECIFICATIONS

Large Enough to Hold Lots of Parts, Small Enough to Fit Almost Anywhere

The diameter of the Rota-Rack's turntable is 36", making it large enough to hold a significant number of parts, yet small enough to fit into tight spaces. When considering space utilization, it is very important to note that the Rota-Rack® can **double or triple capacity**, yet its footprint is only about 10% that of a new lathe and bar feeder.



General Specifications

Usable Surface Area	850 in² / 5480 cm²
Max. Part Length*	10" / 25 cm
Min. Part Diameter	0.25" / 0.6 cm
Max. Part Diameter*	3" / 8 cm
Payload Capacity	700 lbs. / 318 kg
Height Range	See drawing
Power Supply	110V, 50/60Hz
Unit Weight	450 lbs. / 205kg (including conveyor)

*It is sometimes possible to exceed these parameters.
Contact Royal for info.

Conveyor Dimensions

DESCRIPTION	A	B
Short	53"	16"
Standard	75"	38"
Long	94"	57"

Note – unit shown is configured for left-hand positioning. Changing to right-hand configuration simply requires flipping the spiral and conveyor bracket.

Easy Installation

We often refer to the Rota-Rack® as "Off the Shelf Automation" because it is such a breeze to install. In fact, most users report having it up and running within an hour of unpacking it from its shipping crate.

Each Rota-Rack® normally ships with its height and orientation preconfigured according to customer specifications. And because **the unit does not need to connect to the lathe either physically or electrically**, installation is simply a matter of attaching the legs, sliding it into place in front of the machine, and plugging it into a standard 110v outlet.

The one additional step that may be required for some installations is the modification of the lathe's part collection box, usually located on the door of the machine. In order for parts to reach the Rota-Rack® or its conveyor, the bottom and side of the box may have to be opened up as shown in the photo.



ORDERING

The Heavy-Duty Royal Rota-Rack® is Available with Two Control Options and Three Conveyor Options:

Deluxe Control

- ❑ The deluxe control enables the Rota-Rack's® operation to be matched to the machining cycle time.
- ❑ Three inputs are entered by the user: part cycle time, amount of rotation, and auto-shutoff quantity.
- ❑ With this control, each time a part drops out of the machine, the Rota-Rack® will energize and index.
- ❑ The deluxe control is useful for applications where accurate spacing is required to **prevent delicate parts from coming into contact with each other.**

Basic Control

- ❑ The basic control eliminates operator input of the timing/rotation functions.
- ❑ With the basic control, the conveyor and turntable maintain a continuous low-rpm motion.
- ❑ No auto shut-off feature is available with the basic control.

Conveyors

- ❑ There are three conveyor options to handle all clearance needs.
- ❑ The conveyor bolts to the Rota-Rack and plugs directly into the control.
- ❑ Long conveyor includes a support leg.



Royal Heavy-Duty Rota-Rack®

DESCRIPTION	PART NUMBER	PRICE
Heavy-Duty Rota-Rack® with Deluxe Control	51002*	\$9,840
Heavy-Duty Rota-Rack® with Basic Control	51003*	7,995

*Order conveyor separately.

Conveyor Options

DESCRIPTION*	PART NUMBER	PRICE
Short	51021	\$2,655
Standard	51022	2,655
Long	51023	3,640

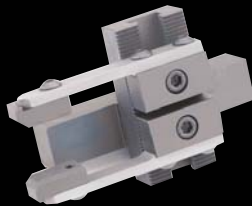
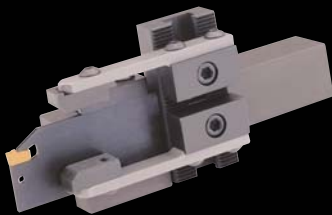
*See dimensions on previous page.

ROTA-RACK® INSTALLATIONS

ROYAL
PRODUCTS
Optimize everything.



Check out the Royal Rota-Rack®
Video at www.rotarack.com



CNC BAR PULLERS

**EASILY AUTOMATE ANY CNC LATHE
FOR LIGHTS-OUT PRODUCTION**

COMPACT CNC BAR PULLERS

Automate Any CNC Lathe

ROYAL
PRODUCTS
Optimize everything.

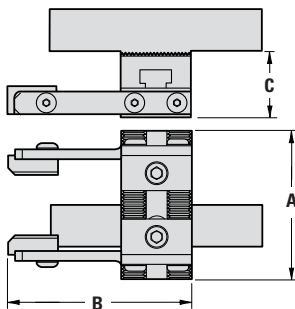
- Great for use with small CNC lathes — compact design **minimizes tool interference**.
- Very easy to setup and use.
- Unit can pull round, square, and hex stock.
- Flexible heat-treated steel fingers provide strong gripping force.
- Each compact bar puller includes one set of serrated jaws and one blank spindle bushing.
- Additional sizes and shank styles are available. Please contact Royal for information.

All parts subject to wear are hardened for strength and durability.

Serrations ensure that components stay locked together for rigidity.



Unit is very easy to use — simply set gap between jaws 1/8" smaller than stock size. As the bar puller slides over the bar along the x-axis, the fingers flex to provide the gripping force. The turret then retracts along the z-axis, pulling the bar out the desired position.



Royal Compact CNC Bar Pullers

SHANK SIZE	GRIPPING RANGE	A	B	C	PART NUMBER	PRICE ¹
1/2" SQ	1/8" – 1 5/8"	2 1/8"	3 1/4"	1 3/16"	43300	\$678
3/4" SQ	1/8" – 2 1/4"	2 5/8"	3 1/4"	1 3/16"	43302	678
1" SQ	1/8" – 2 1/4"	2 5/8"	3 1/4"	1 3/16"	43304	678
1" SQ	1/8" – 3"	3 5/8"	3 1/4"	1 3/16"	43306	722

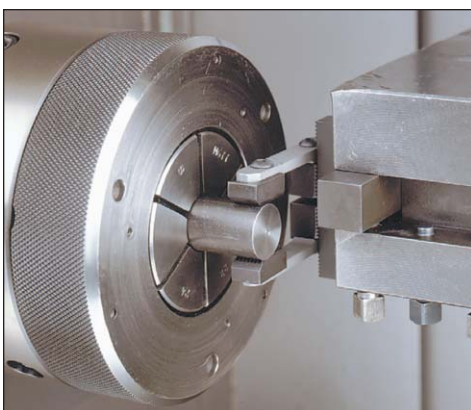
Royal Compact CNC Bar Pullers (Metric)

SHANK SIZE	GRIPPING RANGE	A	B	C	PART NUMBER	PRICE ¹
20mm	3–57mm	67mm	83mm	30mm	43680	\$810
25mm	3–57mm	67mm	83mm	30mm	43684	810
25mm	3–76mm	92mm	83mm	30mm	43688	838

¹Includes bar puller, one set of standard jaws and one blank spindle bushing.

Replacement Parts

DESCRIPTION	PART NUMBER	PRICE/SET
Spring Finger Set	43505	\$85
Serrated Jaw Set	43500	122
Smooth Jaw Set	43502	149



HEAVY-DUTY CNC BAR PULLERS

Automate Any CNC Lathe

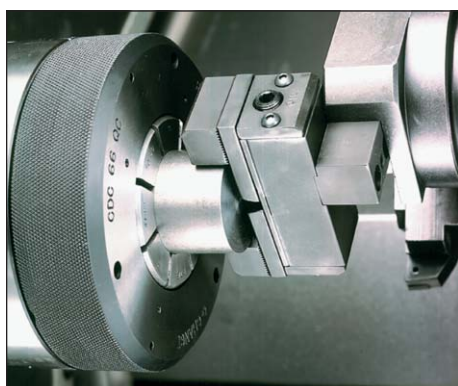
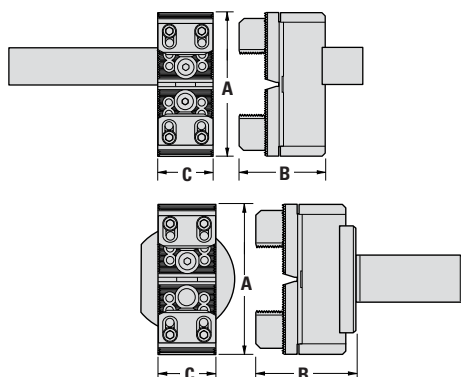
- ❑ Rugged, heavy-duty design withstands the toughest manufacturing environments.
- ❑ Very easy to setup and use.
- ❑ Unit can pull round, square, and hex stock.
- ❑ Large internal die springs provide **very strong gripping force.**
- ❑ Each bar puller includes one set of standard jaws and one blank spindle bushing. Extra capacity jaws sold separately.
- ❑ Additional sizes and shank styles available. Please contact Royal for information.

Serrations ensure that components stay locked together for rigidity.



Unit is very easy to use — simply set gap between jaws 1/8" smaller than stock size. As the bar puller slides over the bar along the x-axis, the jaws compress heavy-duty internal die springs to provide high gripping force. The turret then retracts along the z-axis, pulling the bar out the desired position.

All parts subject to wear are hardened for strength and durability.



Replacement Parts

DESCRIPTION	PART NUMBER	PRICE/SET
Standard Jaw Set	43510	\$167
Extra-Capacity Jaw Set	43512	193

Royal Heavy Duty CNC Bar Pullers — Square Shank

SHANK SIZE	GRIPPING RANGE		A	B	C	PART NUMBER RIGHT HAND MODEL*	PRICE
	STANDARD JAWS	EXTRA-CAPACITY JAWS					
3/4" SQ	1/8" – 2 1/4"	1 7/8" – 3 3/4"	3 7/8"	2 9/16"	1 1/2"	43360	\$925
1" SQ	1/8" – 2 1/4"	1 7/8" – 3 3/4"	3 7/8"	2 9/16"	1 1/2"	43366	983
1" SQ	1/8" – 3 1/2"	1 7/8" – 5 3/8"	4 3/4"	2 9/16"	1 1/2"	43370	1,026
1" SQ	1/8" – 3 5/8"	1 7/8" – 5 1/2"	5"	2 3/4"	1 3/4"	43372	1,059
1" SQ	1/8" – 4 7/8"	1 7/8" – 6 1/2"	6 3/4"	2 3/4"	1 3/4"	43376	1,185

* Most machines require a right-hand unit. If you need a left-hand unit please contact one of our engineers at 1-800-645-4174.

Royal Heavy Duty CNC Bar Pullers — Round Shank

SHANK SIZE	GRIPPING RANGE		A	B	C	PART NUMBER	PRICE
	STANDARD JAWS	EXTRA-CAPACITY JAWS					
1" Dia.	1/8" – 2 1/4"	1 7/8" – 3 3/4"	3 7/8"	2 15/16"	1 1/2"	43400	\$1,173
1 1/4" Dia.	1/8" – 2 1/4"	1 7/8" – 3 3/4"	3 7/8"	2 15/16"	1 1/2"	43402	1,173
1 1/4" Dia.	1/8" – 3 1/2"	1 7/8" – 5 3/8"	5 3/8"	2 15/16"	1 1/2"	43404	1,226

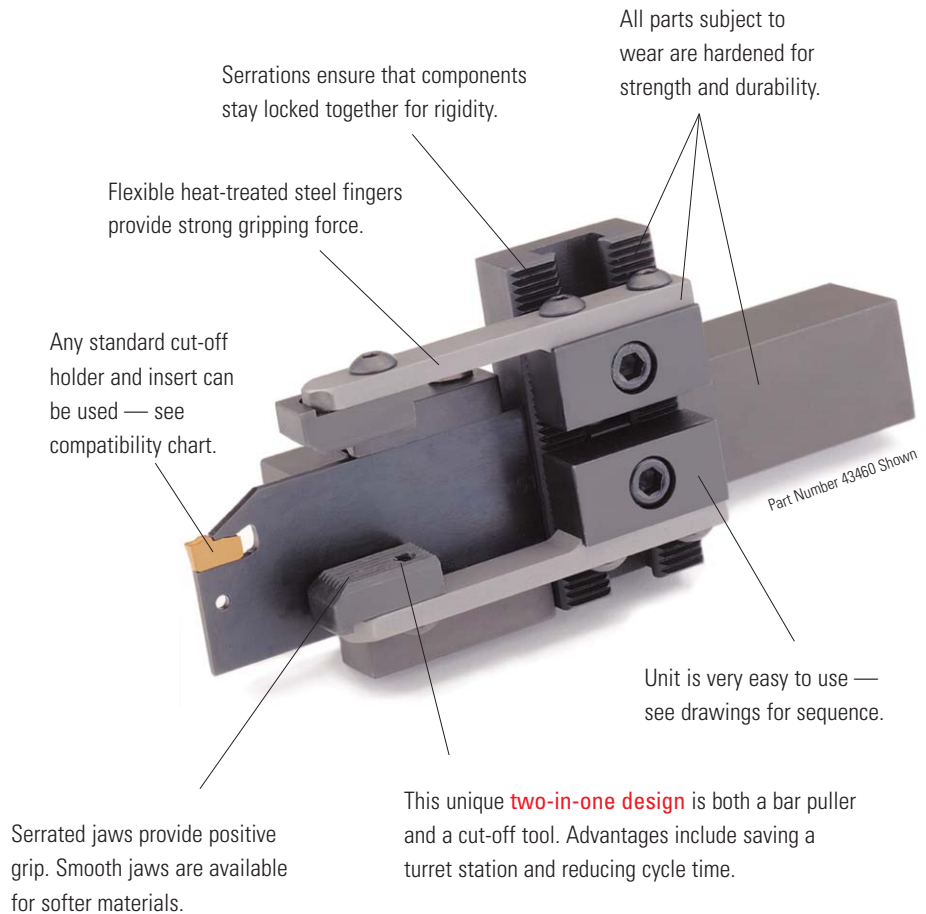
COMBO CNC BAR PULLERS

Automate Any CNC Lathe

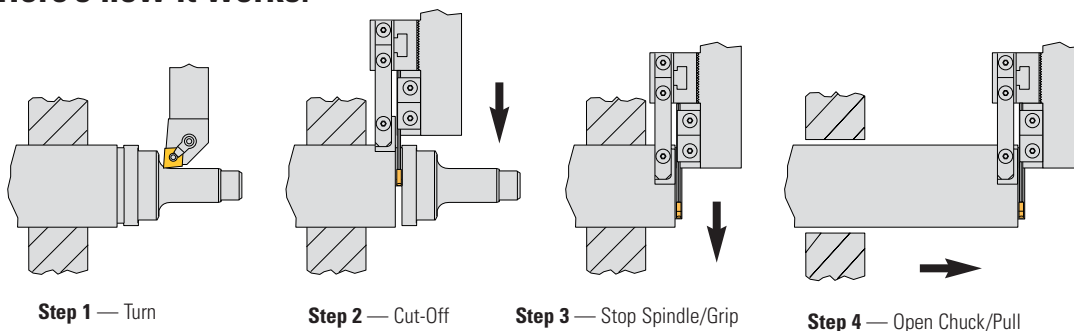
- ❑ The Royal Combo CNC Bar Puller is both a bar puller and a cut-off tool in one unit. Benefits of this design include:

- Saving a turret station.
- **Reduced cycle time** because the turret does not need to index between the cut-off and pulling operations.

- ❑ Very easy to setup and use.
- ❑ Unit can pull round, square, and hex stock.
- ❑ Compact design enables it to be used on most CNC lathes.
- ❑ Each Combo Bar Puller includes one set of standard jaws and one blank spindle bushing. Order cut-off insert and holder separately.



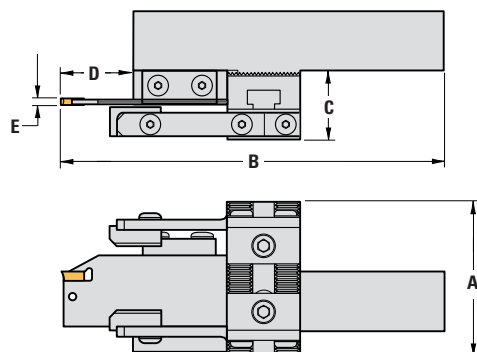
Here's how it works:



**Check out the Royal Bar Puller Video
at www.barpullers.com**

COMBO CNC BAR PULLERS

Automate Any CNC Lathe



Please note dimension D (maximum depth of cut). If a greater depth of cut is required, we suggest using a separate cut-off tool and only using the bar puller for the pulling operation.



Cycle times are reduced because the turret does not need to index between cut-off and pulling operations.

Part Number 43460 Shown.

Royal Combo CNC Bar Pullers

SHANK SIZE	GRIPPING RANGE	A	B	C	MAX DEPTH OF CUT D'	E	PART NUMBER RIGHT HAND ² MODEL	PRICE ³
1/2" SQ	1/8" - 1 5/8"	2 1/8"	4 11/16"	1 3/16"	7/8"	0.125"	43452	\$882
3/4" SQ	1/8" - 2 1/4"	2 5/8"	4 3/4"	1 3/16"	7/8"	0.125"	43456	906
1" SQ	1/8" - 2 1/4"	2 5/8"	6 3/8"	1 3/16"	1 1/4"	0.125"	43460	919
1" SQ	1/8" - 3"	3 5/8"	6 3/8"	1 3/16"	1 1/4"	0.125"	43464	950
1" SQ	1/8" - 4"	3 5/8"	6 3/8"	1 3/16"	1 1/4"	0.125"	43468	1,080

- ❑ Cut-off holder and insert can be purchased separately from Royal Products or through your tooling supplier.
- ❑ Bar puller accepts many popular brands of holders and inserts (see chart).
- ❑ Cut-off holders not purchased from Royal must be slightly modified before being used with bar puller.

Royal Combo CNC Bar Pullers (Metric)

SHANK SIZE	GRIPPING RANGE	A	B	C	MAX DEPTH OF CUT D'	E	PART NUMBER RIGHT HAND ² MODEL	PRICE ³
20mm	3-57mm	67mm	121mm	30mm	22mm	3mm	43615	\$1,054
25mm	3-57mm	67mm	162mm	30mm	32mm	3mm	43625	1,064
25mm	3-76mm	92mm	162mm	30mm	32mm	3mm	43635	1,109

¹Maximum depth of cut.

²Most machines require a right-hand unit. If you need a left hand unit please contact one of our engineers at 1-800-645-4174.

³Includes bar puller, one set of standard jaws and one blank spindle bushing. Order insert holder and insert separately.

Holder with Insert

BAR PULLER SHANK SIZE	PART NUMBER	PRICE*
1/2" or 3/4"	43520	\$164
1"	43522	179



*Includes one modified holder, one neutral cut-off insert, and one installation / removal tool. Royal supplies Kennametal insert GSP125N.

Replacement Parts — Combo Model

DESCRIPTION	PART NUMBER	PRICE/SET
Spring Finger Set	43505	\$85
Serrated Jaw Set	43500	122
Smooth Jaw Set	43502	149

Compatibility Chart

BRAND	1/2", 3/4" AND 20mm SHANK	1" AND 25mm SHANK
Carbology	150.10-20-3	150.10-25-3
Iscar	SGFH26-3	SGFH32-3
Kennametal	DSB4-340-105	DSB5-340-110
Manchester	340-105	340-110
Sandvik	151.2-21-30	151.2-25-30
Valenite	VH101 26 3	VH101 32 3

GRIPPEX 20L COOLANT-ACTUATED BAR PULLERS — Automate Any CNC Lathe



**Can be operated
by either coolant
or compressed air.**

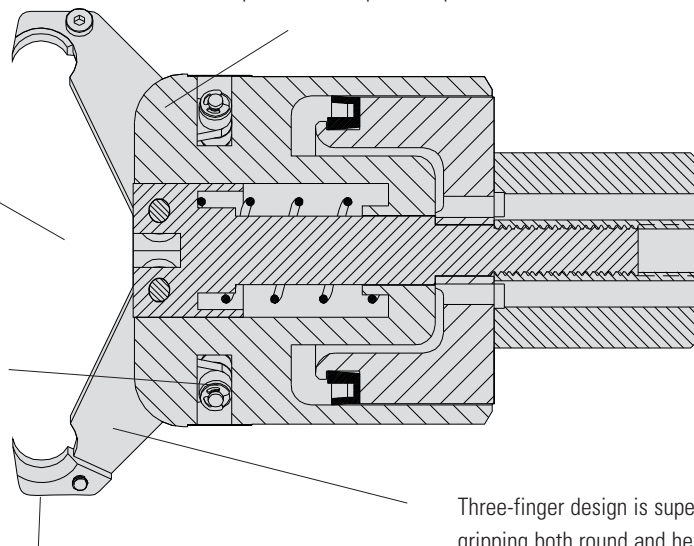
- ❑ The patented Grippex 20L CNC bar puller is actuated by a CNC lathe's coolant system. As coolant is fed through the unit, it pushes a piston forward which causes the fingers to close around the bar stock. When the coolant is turned off, the fingers automatically spring open.
- ❑ Self-adjusting mechanism — fingers will close down until they contact the bar stock so no presetting is necessary. This feature allows the Grippex to **make multiple pulls on the same workpiece**, even after the OD has been turned.
- ❑ Unit can also be operated by air pressure.
- ❑ When fitted with robot gripper jaws, the Grippex can:
 - Remove a bar remnant from a bar-fed lathe and drop it into the parts catcher. This eliminates the risk of the remnant falling into the chip conveyor where it can become jammed and cause damage.
 - Remove a finished workpiece from a sub-spindle and place it into the parts catcher. This eliminates the need for unreliable ejectors and also **allows the sub-spindle to swallow longer parts**.

The Grippex has a wide gripping range of $\frac{1}{8}$ " — $3\frac{1}{8}$ ". Higher capacity gripping fingers are also available.

Very high gripping force and smooth operation is achieved through a **patented finger mechanism** that pivots on two roller bearings. As little as 15 psi of coolant pressure is enough to enable the Grippex to pull a 210 lb. bar!

Hardened finger inserts reduce wear and help the Grippex penetrate hard materials like stainless steel.

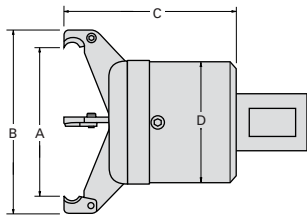
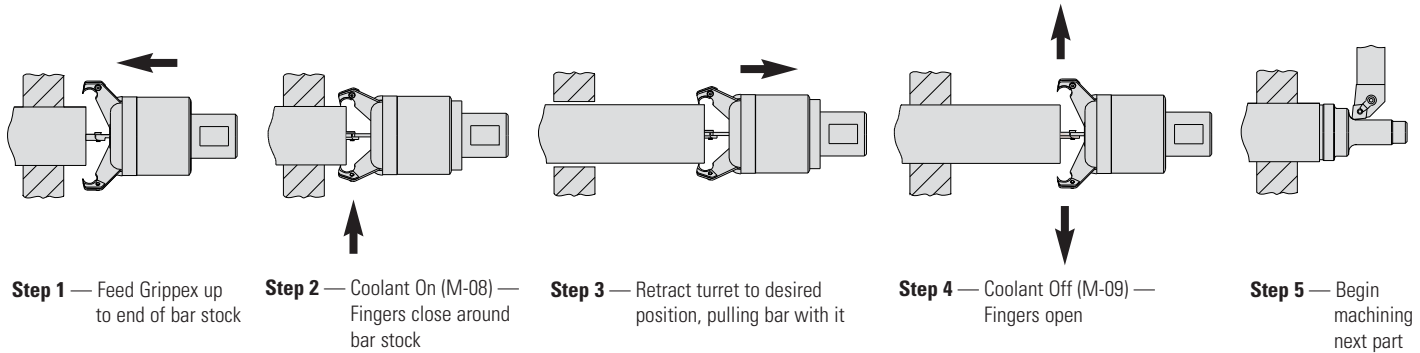
Thick-walled heavy-duty construction helps to protect unit and allows it to be used at coolant pressures of up to 280 psi.



Input ports for
coolant or air.

Three-finger design is superior for gripping both round and hex stock. Special two-finger model also available. Contact Royal for information.

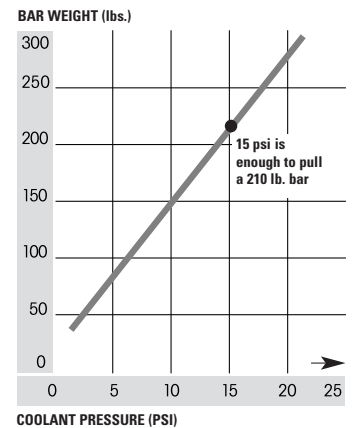
GRIPPEX 20L COOLANT-ACTUATED BAR PULLERS — Automate Any CNC Lathe



20L Clearance Dimensions

GRIPPING RANGE	FINGER PART NUMBER	A	B	C	D
1/8" – 2 3/8"	43170	2 3/8"	3 1/4"	3 1/2"	2 11/16"
1/8" – 3 1/8"	43175	3 1/8"	4"	3 11/16"	2 11/16"
5/16" – 4 1/8"	43180	4 1/8"	5 1/16"	4 1/4"	2 11/16"

Grippex 20L Pulling Force Graph



Grippex — 20L Bar Pullers

SHANK	PART NUMBER	PRICE*
1" Round	43140	\$1,328
1 1/4" Round	43145	1,328
1 1/2" Round	43150	1,328

*Includes one set of standard fingers (3/4" cap), and one set of inserts.



Replacement Finger Sets

CAPACITY	PART NUMBER	PRICE/SET
1/8" – 2 3/8"	43170	\$148
1/8" – 3 1/8" (Std.)	43175	161
5/16" – 4 1/8"	43180	302

Contact us if you need fingers for an older model Grippex unit.



Replacement Insert Sets

DESCRIPTION	PART NUMBER	PRICE/SET
20L Insert Set	43185	\$108



Coolant Adapter

Provides an easy method for feeding coolant or air to unit. Not necessary for most applications.

DESCRIPTION	PART NUMBER	PRICE/SET
Coolant Adapter	43190	\$108



Robot Gripper Jaw Sets

For removing finished parts from a subspindle or removing bar remnants from main spindle.

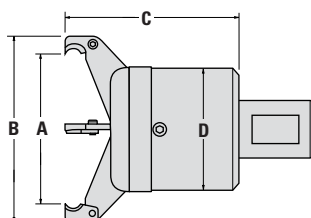
DESCRIPTION	PART NUMBER	PRICE/SET
20L Robot Gripper Jaw Set	43106	\$191

GRIPPEX 20S COOLANT-ACTUATED BAR PULLERS — Automate Any CNC Lathe

- Same great features as Model 20L featured on previous pages.
- Smaller body diameter** enables 20S units to be used on machines with less tool clearance and smaller turrets.
- Gripping force for 20S is quite high, but not as high as the 20L models (see chart).
- 140 psi maximum coolant pressure.



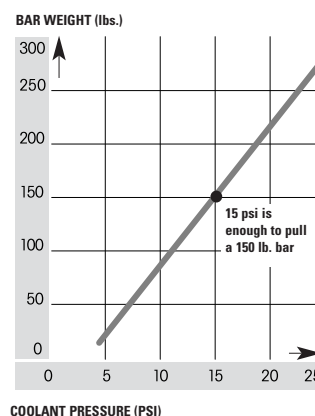
U.S. Patent
#6,530,578



20S Clearance Dimensions

GRIPPING RANGE	A	B	C	D
1/8" - 2 1/16"	2 1/16"	2 15/16"	3 3/8"	2 3/8"

Grippex 20S Pulling Force Graph



Grippex 20S Bar Pullers

SHANK	PART NUMBER	PRICE
1"	43340	\$1,237
1 1/4"	43345	1,237



Grippex 20S Replacement Finger Sets

CAPACITY	PART NUMBER	PRICE/SET
1/8" - 2 1/16"	43339	\$148

Coolant Adapter

Provides an easy method for feeding coolant or air to unit. Not necessary for most applications.



DESCRIPTION	PART NUMBER	PRICE/SET
Coolant Adapter	43190	\$108



Grippex 20S Replacement Insert Sets

CAPACITY	PART NUMBER	PRICE/SET
20S Insert Set	43185	\$108



HIGH PERFORMANCE LIVE & DEAD CENTERS

ROYAL MAKES THE BEST LIVE CENTERS ON EARTH

WHY DO TOP MANUFACTURERS INSIST ON ROYAL LIVE CENTERS?

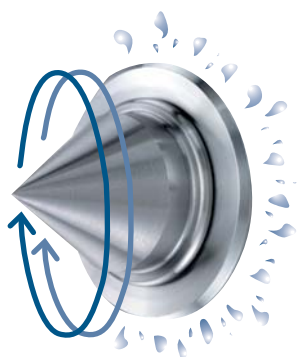


Royal live centers are widely regarded by top metalworking professionals as the best live centers available anywhere in the world. Each Royal live center is a finely crafted tool, incorporating the highest quality steels, bearings, and seals. Manufactured to exacting tolerances, all Royal live centers are guaranteed accurate to $\pm 0.00005"$ TIR or better.

Royal Products offers a broad range of standard live center models to suit virtually all turning applications. We also design and build hundreds of custom centers each year to meet special customer requirements. Custom live centers from Royal Products are competitively priced and are held to the same high manufacturing tolerances as our standard models.

EXCLUSIVE ROTO-SHIELD™ TECHNOLOGY

Only Available on Royal Live Centers



**ROYAL
ROTO-SHIELD™
TECHNOLOGY**

The new, exclusive Royal Roto-Shield™ represents a **breakthrough in live center technology**, significantly increasing the effective operating life.

Royal Roto-Shield™ Technology consists of two main components:

- A live center point machined from a solid bar which incorporates a specially-shaped steel coolant slinger
- A long-life, spring-loaded seal that is resistant to abrasion, high temperatures, and virtually all metalworking fluids

A **dramatic increase in operating life** is achieved through the following effects:

- Coolant is deflected, keeping it from penetrating the center
- Bearings are protected from harmful fines and dust
- Seal wear is minimized
- Lubricating grease lasts longer and retains consistency

The Royal Roto-Shield™ is now a standard feature on the following Royal Live Center models:



- | | |
|-----------------------------------|--------------------------------------|
| - High Precision Quad Bearing | - The Ultimate™ Multi-Tasking Center |
| - High Precision CNC Quad Bearing | - High-Speed Precision |
| - Heavy-Duty Spindle Type | - Super Quad Extra Heavy-Duty |
| - Heavy-Duty CNC Spindle Type | - Spline-Rolling Center |



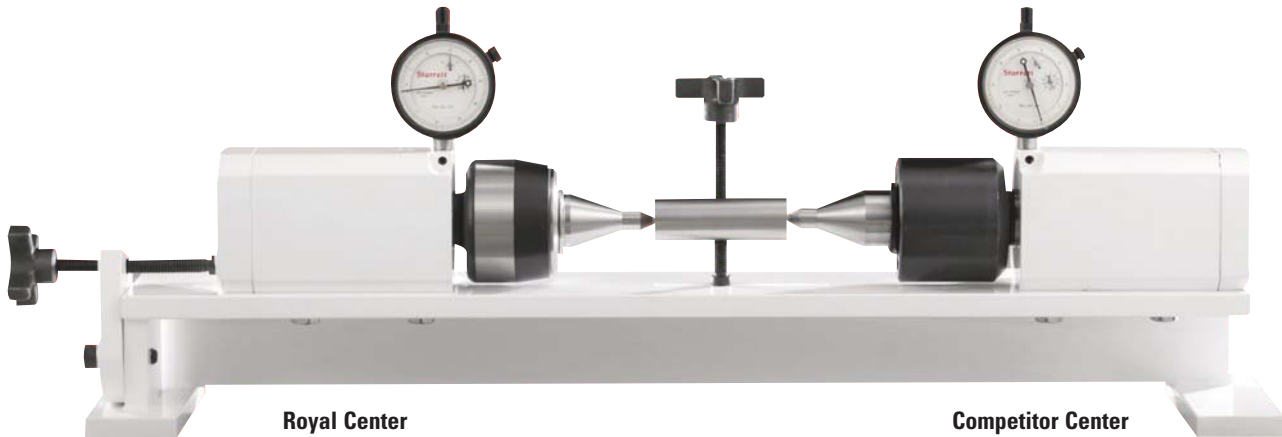
**✓ High-Pressure
Coolant Approved**

Insist on Roto-Shield™ Technology – Only Available on Royal Live Centers



**Check out the Royal Live Center
Video at www.livecenters.com**

WHAT MAKES ROYAL LIVE CENTERS THE MOST RIGID?



One of the most common misconceptions regarding live centers relates to the internal length of the rotating point.

Some manufacturers believe that a long, thin point provides more rigidity than a short, thick point. But in fact, the opposite is true.

In order to verify that Royal's short, thick point provides superior rigidity over a long, thin point, we built the test fixture pictured above.

Here's how it works:

- Both live centers have holes drilled in their shanks corresponding to the indicator locations.
- As radial force is applied evenly to the point tips by turning a centrally-located screw, the indicators are able to measure the internal deflection of each point.
- Almost immediately upon application of the load, the indicators show that **the competitor's point flexes 600% more than the Royal point!**

Point Analysis of 4MT Spindle Type Live Centers



Royal Point



Other Brand Point

D1 = Diameter of Royal Point = .603"

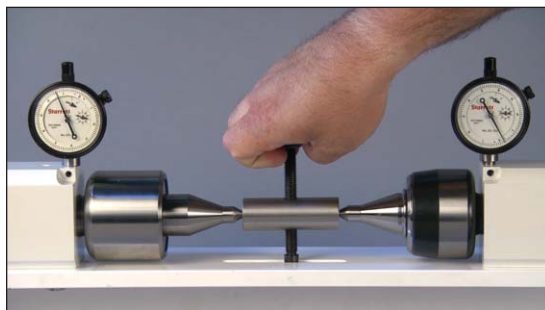
D2 = Diameter of Other Brand Point = .465"

Cross-Sectional Area of Royal Point = .285 sq. in.

Cross-Sectional Area of Other Brand Point = .170 sq. in.

The cross-sectional area of the point on the Royal Center is 68% larger than that of the other brand, making the Royal point much more rigid and less likely to deflect under load.

Royal's thick, beefy point offers superior rigidity, resulting in tighter part tolerances and chatter-free surface-finishes.



**See the test in action at
www.livecenters.com**

One Size Does Not Fit All – So We Turned Special Centers Into Standards!

One of Royal's strengths as a leading live center manufacturer is our ability to design and build custom centers to address non-standard applications. However, there are two major **drawbacks that are almost always associated with custom-made centers: longer lead times and higher prices.**

As an ISO company dedicated to continuous improvement, we decided to see if it might be possible to categorize special centers according to their similarities, and then offer a few new standard models that could handle most jobs.

Our engineers analyzed the prints of hundreds of special centers that we had manufactured over the past three years, and the results were shocking – **over 90% of our customers' special needs could be covered with just five new point styles.** These are:



Full-diameter long point for shaft work and parts with large center holes



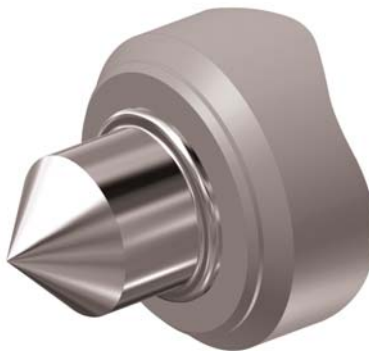
A reduced-diameter long point for use when greater clearance is needed



A small bull-nose point for use with tubes or parts with large center holes



A female point with a 90° included angle for locating on OD part chamfers



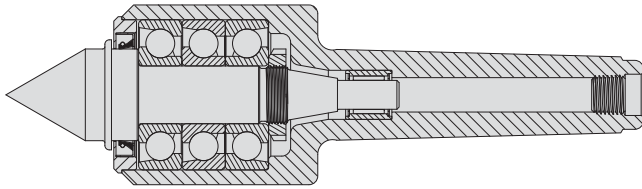
A male point with a 90° included angle for locating on internal part chamfers



**See pages 62-63 for
ordering information**

Royal maintains a full inventory of each model to ensure **same-day delivery, and because we manufacture them in quantity, they are **very aggressively-priced.****

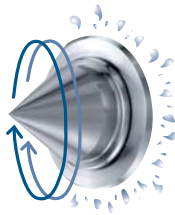
OFF-THE-SHELF "SPECIALS"



Deciding which live center model to use as a platform for Royal's new off-the-shelf "special" program was easy. We chose the High-Precision Quad-Bearing model for the following reasons:

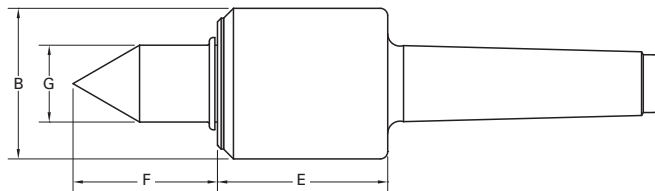
- 1- Very Rigid Bearing Arrangement
- 2- Exclusive Roto-Shield™ Technology
- 3- Low-Profile Head

All Models In Stock for Immediate Delivery



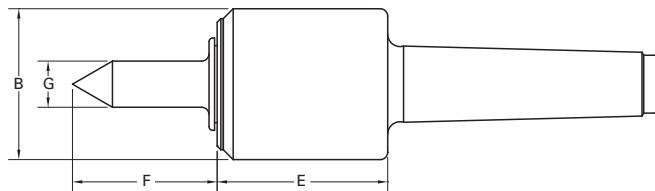
**EXCLUSIVE ROYAL
ROTO-SHIELD™
TECHNOLOGY**

**✓ High-Pressure
Coolant Approved**



Royal High-Precision Quad-Bearing Live Centers – Full Diameter Long Point

TAPER	B	E	F	G	MAX. SUGGESTED RPM*	WEIGHT OF WORKPIECE (lbs.)	THRUST LOAD (lbs.)	PART NUMBER	PRICE
2 MT	1.70	2.12	1.75	0.88	6,000	465	1,270	10478	\$546
3 MT	1.70	2.12	1.75	0.88	6,000	465	1,270	10479	564
4 MT	2.45	2.78	2.35	1.25	5,000	1,230	2,150	10480	699
5 MT	2.45	2.78	2.35	1.25	5,000	1,230	2,150	10481	733

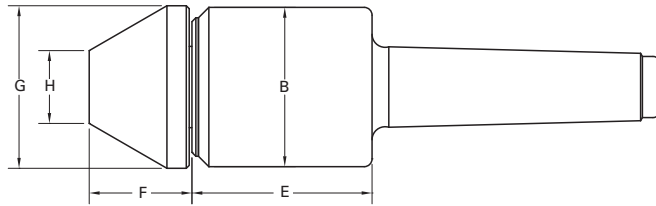


Royal High-Precision Quad-Bearing Live Centers – Small Diameter Long Point

TAPER	B	E	F	G	MAX. SUGGESTED RPM*	WEIGHT OF WORKPIECE (lbs.)	THRUST LOAD (lbs.)	PART NUMBER	PRICE
2 MT	1.70	2.12	1.75	0.50	6,000	350	1,270	10482	\$546
3 MT	1.70	2.12	1.75	0.50	6,000	350	1,270	10483	564
4 MT	2.45	2.78	2.35	0.75	5,000	925	2,150	10484	699
5 MT	2.45	2.78	2.35	0.75	5,000	925	2,150	10485	733

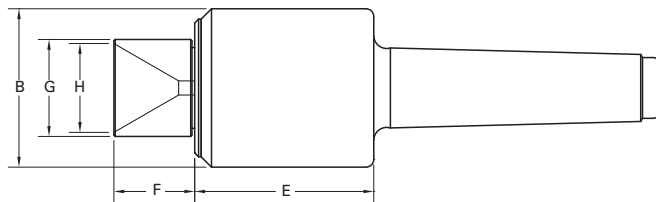
* Maximum recommended operating limit. Operating above this speed could result in heat build-up and accelerated bearing wear.

OFF-THE-SHELF "SPECIALS"



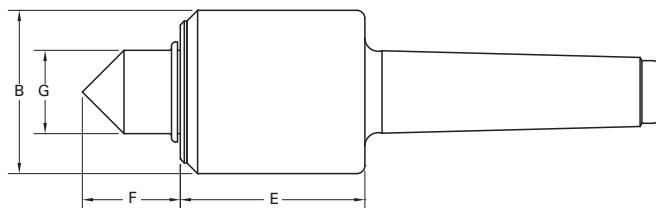
Royal High-Precision Quad-Bearing Live Centers – Bull Nose Point

TAPER	B	E	F	G	H	MAX. SUGGESTED RPM*	WEIGHT OF WORKPIECE (lbs.)	THRUST LOAD (lbs.)	PART NUMBER	PRICE
2 MT	1.70	2.12	1.25	1.75	0.75	6,000	750	1,270	10490	\$558
3 MT	1.70	2.12	1.25	1.75	0.75	6,000	750	1,270	10491	576
4 MT	2.45	2.78	1.58	2.50	1.12	5,000	1,905	2,150	10492	733
5 MT	2.45	2.78	1.58	2.50	1.12	5,000	1,905	2,150	10493	771



Royal High-Precision Quad-Bearing Live Centers – 90° Female Point

TAPER	B	E	F	G	H	MAX. SUGGESTED RPM*	WEIGHT OF WORKPIECE (lbs.)	THRUST LOAD (lbs.)	PART NUMBER	PRICE
2 MT	1.70	2.12	1.00	1.12	0.15–1.00	6,000	885	1,270	10494	\$546
3 MT	1.70	2.12	1.00	1.12	0.15–1.00	6,000	885	1,270	10495	564
4 MT	2.45	2.78	1.25	1.50	0.21–1.38	5,000	2,240	2,150	10496	699
5 MT	2.45	2.78	1.25	1.50	0.21–1.38	5,000	2,240	2,150	10497	733

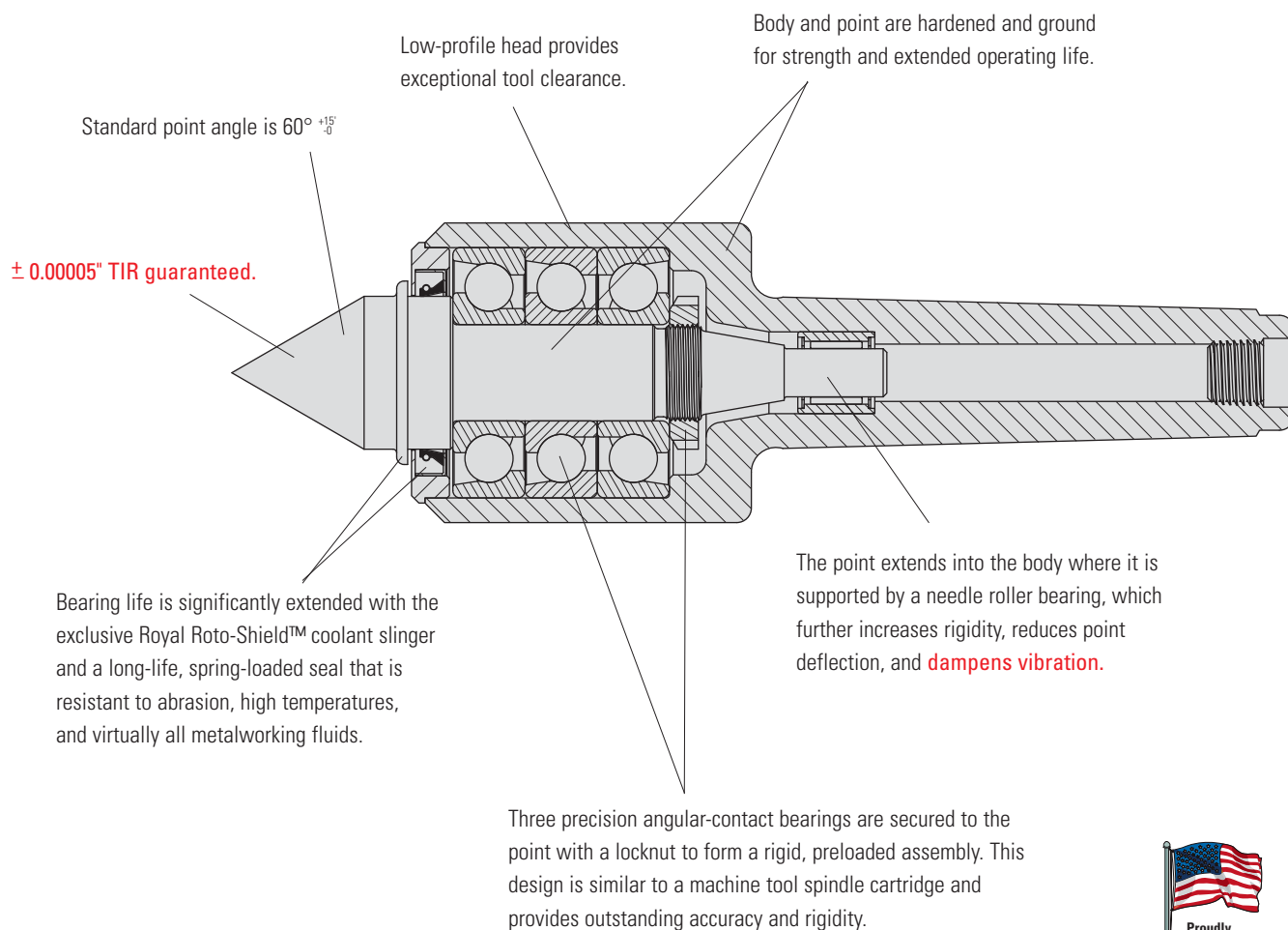


Royal High-Precision Quad-Bearing Live Centers – 90° Male Point

TAPER	B	E	F	G	MAX. SUGGESTED RPM*	WEIGHT OF WORKPIECE (lbs.)	THRUST LOAD (lbs.)	PART NUMBER	PRICE
2 MT	1.70	2.12	1.07	0.88	6,000	885	1,270	10486	\$538
3 MT	1.70	2.12	1.07	0.88	6,000	885	1,270	10487	558
4 MT	2.45	2.78	1.47	1.25	5,000	2,240	2,150	10488	693
5 MT	2.45	2.78	1.47	1.25	5,000	2,240	2,150	10489	731

* Maximum recommended operating limit. Operating above this speed could result in heat build-up and accelerated bearing wear.

HIGH-PRECISION QUAD-BEARING LIVE CENTERS



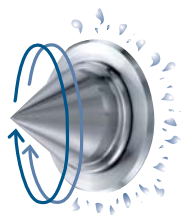
- ❑ An excellent choice for precision turning, grinding, and hard-turning.
- ❑ Precision, preloaded bearing assembly provides exceptional rigidity and accuracy.
- ❑ Low-profile head offers superior tool clearance.
- ❑ Exclusive Roto-Shield™ coolant slinger and upgraded seal provide outstanding bearing protection **for extended operating life.**
- ❑ Body and point are hardened and ground for strength and long life.



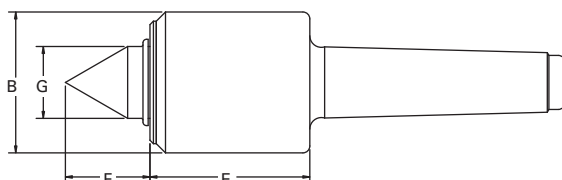
**Check out the Royal Live Center
Video at www.livecenters.com**

HIGH-PRECISION QUAD-BEARING LIVE CENTERS

ROYAL
PRODUCTS
Optimize everything.



**EXCLUSIVE ROYAL
ROTO-SHIELD™
TECHNOLOGY**



**✓ High-Pressure
Coolant Approved**

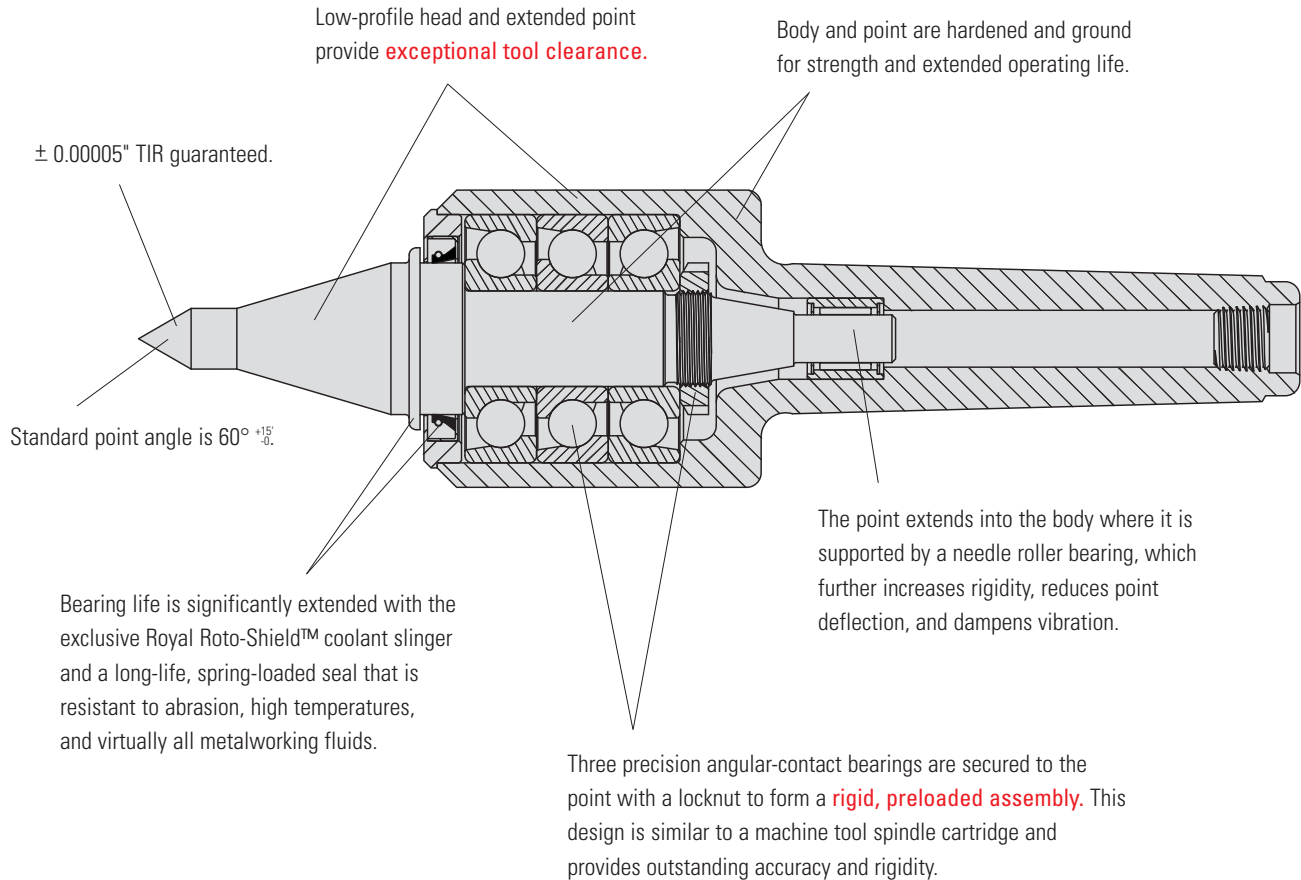
Royal High-Precision Quad-Bearing Live Centers - Standard Point

TAPER	B	E	F	G	MAX. SUGGESTED RPM*	WEIGHT OF WORKPIECE (lbs.)	THRUST LOAD (lbs.)	PART NUMBER	PRICE
2 MT	1.70	2.12	1.07	0.88	6,000	885	1,270	10412	\$533
3 MT	1.70	2.12	1.07	0.88	6,000	885	1,270	10413	550
4 MT	2.45	2.78	1.47	1.25	5,000	2,240	2,150	10414	686
5 MT	2.45	2.78	1.47	1.25	5,000	2,240	2,150	10415	723
5 MT HD	3.82	3.89	2.31	2.00	3,000	5,240	5,300	10445	1,451
6 MT HD	3.82	3.89	2.31	2.00	3,000	5,240	5,300	10446	1,783

* Maximum recommended operating limit. Operating above this speed could result in heat build-up and accelerated bearing wear.

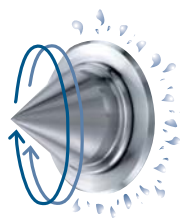
Insist on Roto-Shield™ Technology – Only Available on Royal Live Centers

HIGH-PRECISION QUAD-BEARING LIVE CENTERS

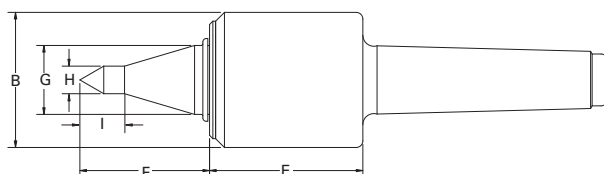


- ❑ An excellent choice for precision turning, grinding, and hard-turning.
- ❑ Precision, preloaded bearing assembly provides exceptional rigidity and accuracy.
- ❑ Low-profile head and extended point combine to offer superior tool clearance.
- ❑ Exclusive Roto-Shield™ coolant slinger and upgraded seal provide **outstanding bearing protection** for extended operating life.
- ❑ Body and point are hardened and ground for strength and long life.

HIGH-PRECISION QUAD-BEARING LIVE CENTERS



**EXCLUSIVE ROYAL
ROTO-SHIELD™
TECHNOLOGY**



**✓ High-Pressure
Coolant Approved**

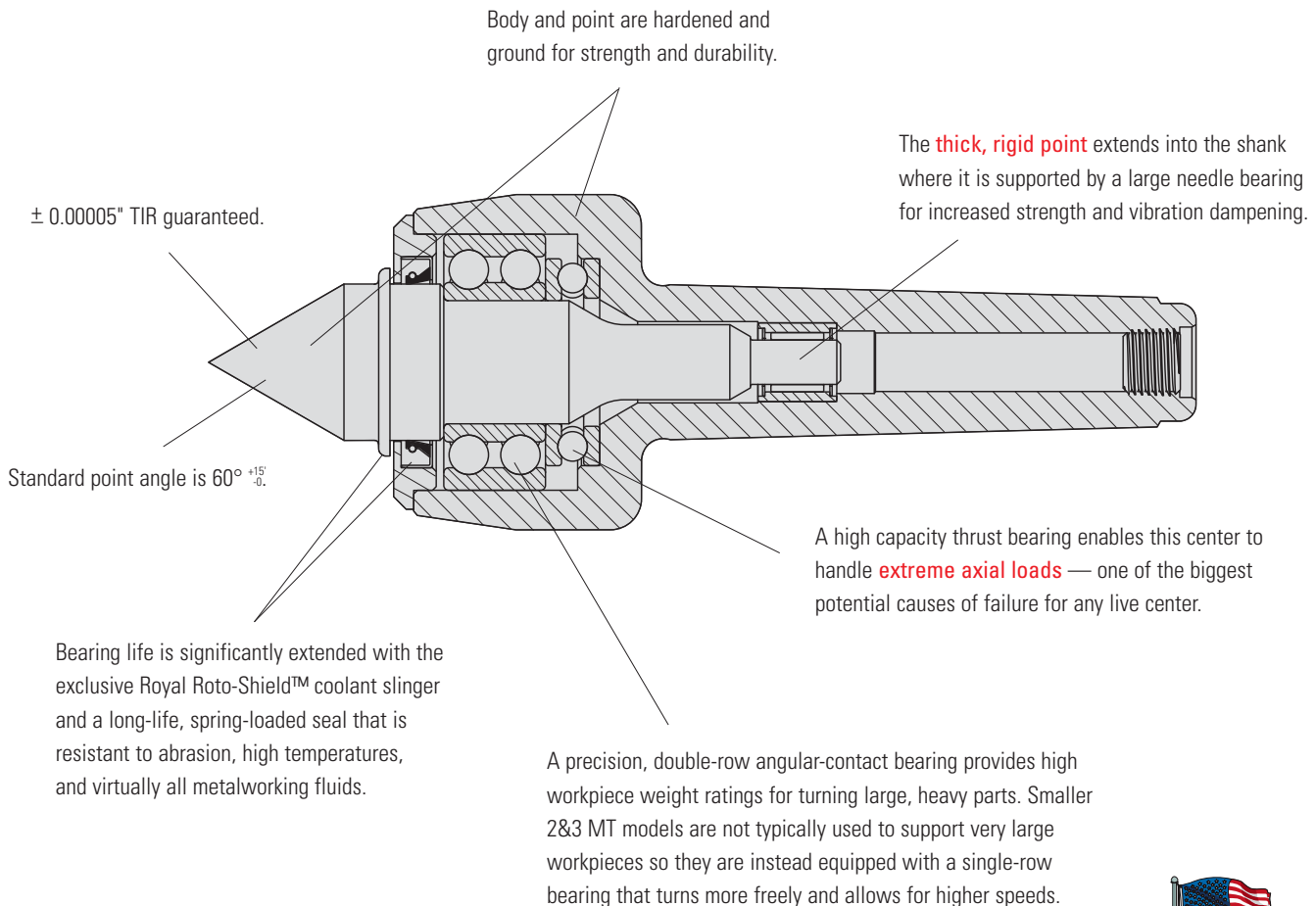
Royal High-Precision Quad-Bearing Live Centers – CNC Point

TAPER	B	E	F	G	H	I	MAX. SUGGESTED RPM*	WEIGHT OF WORKPIECE (lbs.)	THRUST LOAD (lbs.)	PART NUMBER	PRICE
2 MT	1.70	2.12	1.75	0.88	0.38	0.63	6,000	465	1,270	10662	\$533
3 MT	1.70	2.12	1.75	0.88	0.38	0.63	6,000	465	1,270	10663	550
4 MT	2.45	2.78	2.35	1.25	0.50	0.81	5,000	1,230	2,150	10664	686
5 MT	2.45	2.78	2.35	1.25	0.50	0.81	5,000	1,230	2,150	10665	723
5 MT HD	3.82	3.89	3.34	2.00	0.75	1.28	3,000	2,210	5,300	10475	1,451
6 MT HD	3.82	3.89	3.34	2.00	0.75	1.28	3,000	2,210	5,300	10476	1,783

* Maximum recommended operating limit. Operating above this speed could result in heat build-up and accelerated bearing wear.

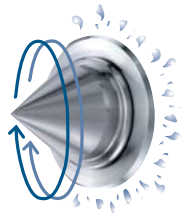
Insist on Roto-Shield™ Technology – Only Available on Royal Live Centers

HEAVY-DUTY SPINDLE TYPE LIVE CENTERS

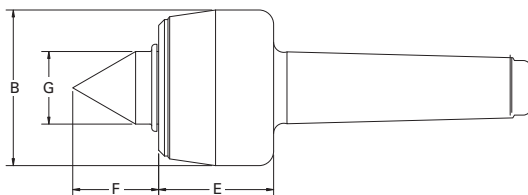


- ❑ One of our most popular models — an excellent **heavy-duty live center** designed to handle almost all CNC and manual turning jobs.
- ❑ Heavy-duty precision bearings provide exceptional radial and thrust load capacities.
- ❑ The thick, rigid point extends into the shank where it is supported by a large needle bearing for increased strength and vibration dampening.
- ❑ Exclusive Roto-Shield™ coolant slinger and upgraded seal provide outstanding bearing protection for extended operating life.
- ❑ Body and point are hardened and ground for accuracy and durability.

HEAVY-DUTY SPINDLE TYPE LIVE CENTERS



**EXCLUSIVE ROYAL
ROTO-SHIELD™
TECHNOLOGY**



**✓ High-Pressure
Coolant Approved**

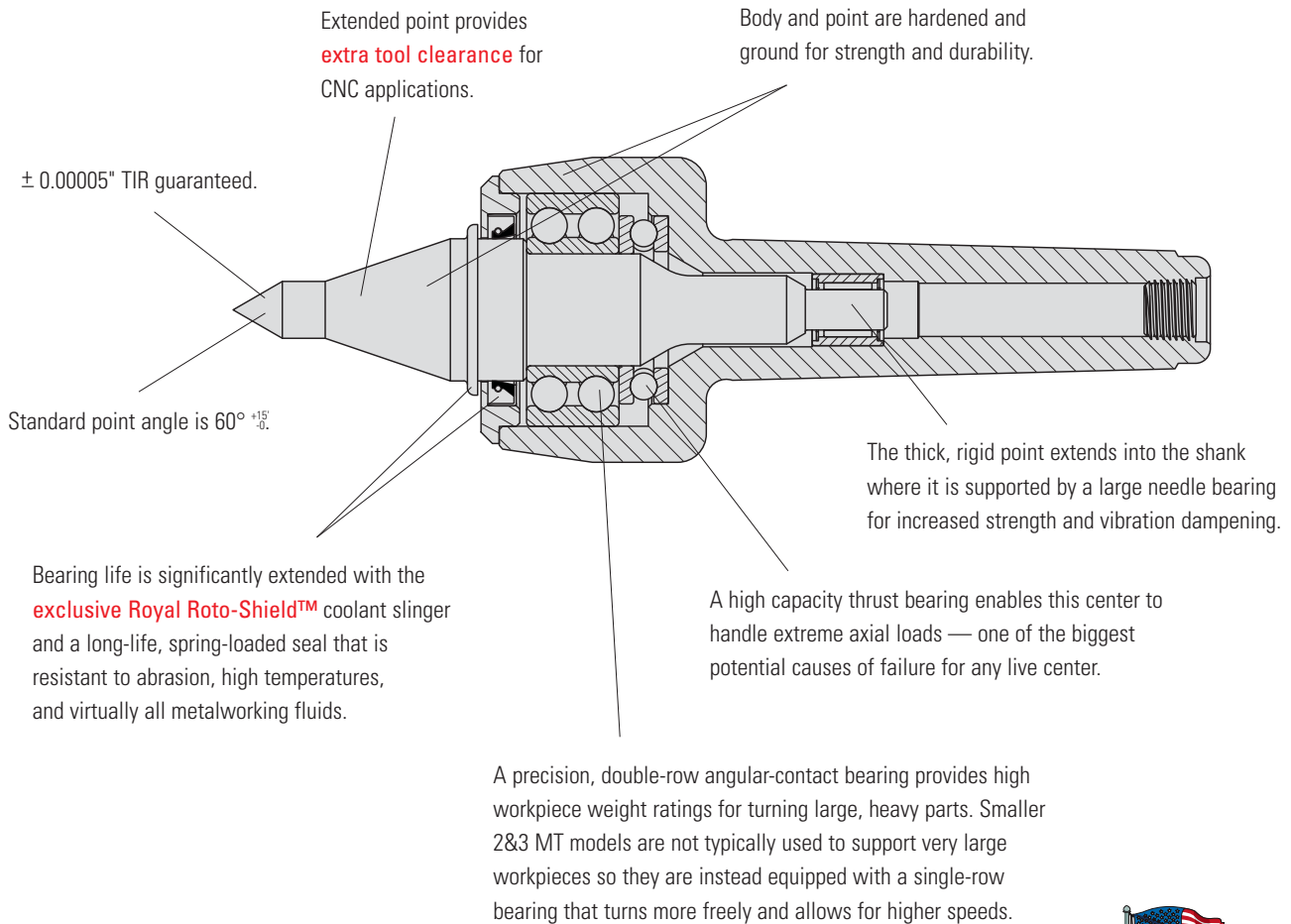
Royal Heavy-Duty Spindle Type Live Centers

TAPER	B	E	F	G	MAX. SUGGESTED RPM*	WEIGHT OF WORKPIECE (lbs.)	THRUST LOAD (lbs.)	PART NUMBER	PRICE
2 MT	1.75	1.47	1.01	0.88	6,000	725	2,360	10102	\$445
3 MT	2.33	1.75	1.22	1.00	5,000	970	3,900	10103	492
4 MT	2.68	1.98	1.48	1.25	4,500	1,720	4,050	10104	642
5 MT	3.45	2.81	1.84	1.50	3,500	3,260	5,700	10105	885
6 MT	4.00	3.15	2.31	2.00	3,500	4,080	6,000	10106	1,653

* Maximum recommended operating limit. Operating above this speed could result in heat build-up and accelerated bearing wear.

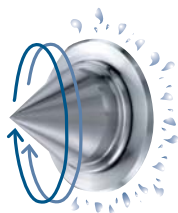
Insist on Roto-Shield™ Technology – Only Available on Royal Live Centers

HEAVY-DUTY CNC SPINDLE TYPE LIVE CENTERS

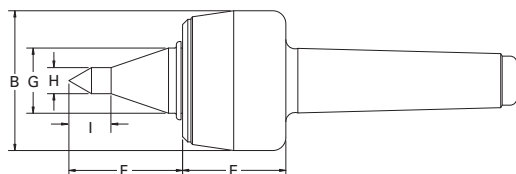


- ❑ One of our most popular models — an excellent heavy-duty live center designed to handle almost all manual and CNC turning jobs.
- ❑ Heavy-duty precision bearings provide exceptional radial and thrust load capacities.
- ❑ The thick, rigid point extends into the shank where it is supported by a large needle bearing for **increased strength and vibration dampening**.
- ❑ Exclusive Roto-Shield™ coolant slinger and upgraded seal provide outstanding bearing protection for extended operating life.
- ❑ Body and point are hardened and ground for accuracy and durability.

HEAVY-DUTY CNC SPINDLE TYPE LIVE CENTERS



**EXCLUSIVE ROYAL
ROTO-SHIELD™
TECHNOLOGY**



**✓ High-Pressure
Coolant Approved**

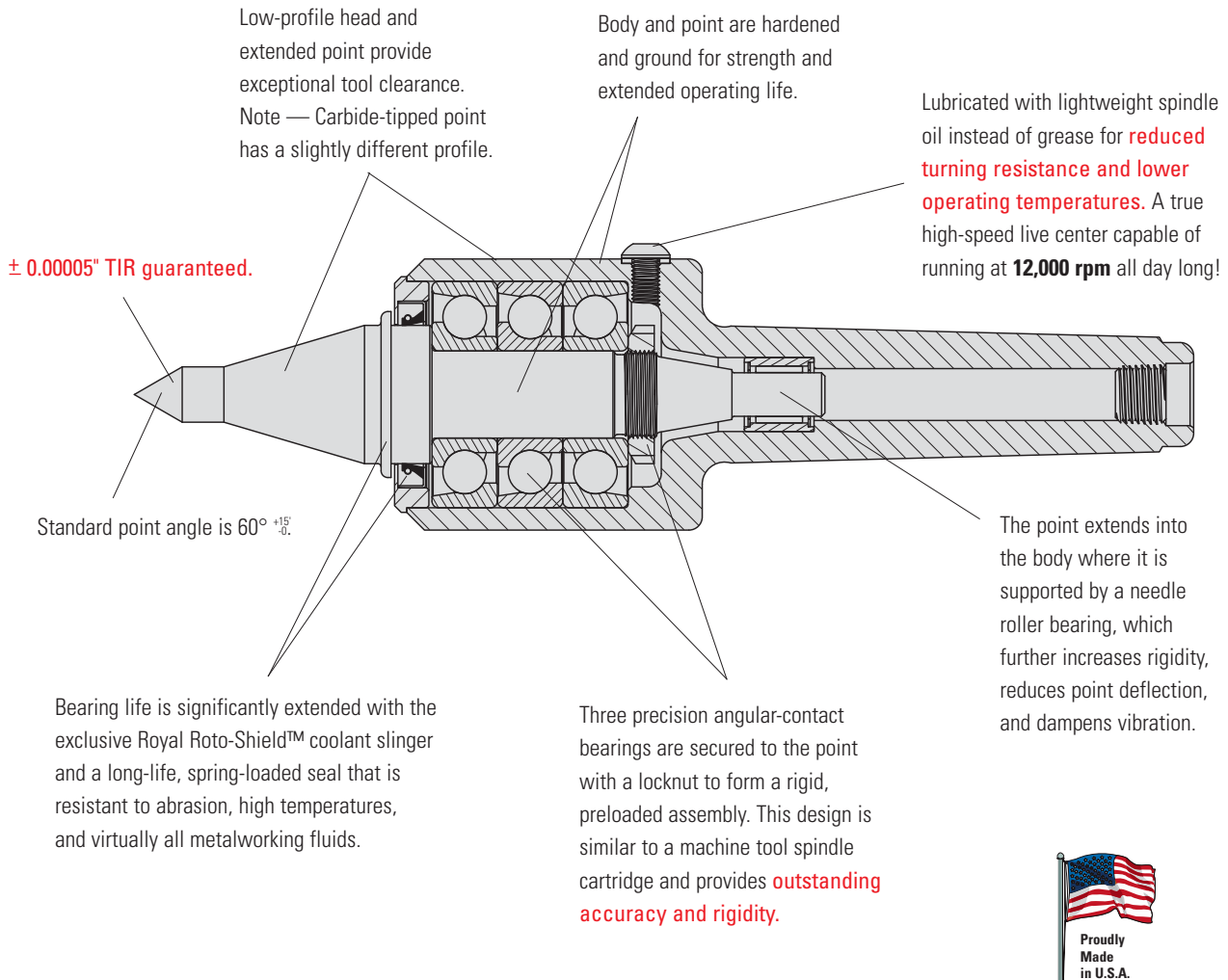
Royal Heavy-Duty CNC Spindle Type Live Centers

TAPER	B	E	F	G	H	I	MAX. SUGGESTED RPM*	WEIGHT OF WORKPIECE (lbs.)	THRUST LOAD (lbs.)	PART NUMBER	PRICE
2 MT	1.75	1.47	1.35	0.88	0.38	0.63	6,000	375	2,360	10212	\$445
3 MT	2.33	1.75	1.86	1.00	0.38	0.63	5,000	740	3,900	10213	519
4 MT	2.68	1.98	2.18	1.25	0.50	0.81	4,500	1,120	4,050	10214	651
5 MT	3.45	2.81	2.58	1.50	0.50	0.81	3,500	1,930	5,700	10215	885
6 MT	4.00	3.15	3.00	2.00	0.75	1.28	3,500	2,420	6,000	10216	1,709

* Maximum recommended operating limit. Operating above this speed could result in heat build-up and accelerated bearing wear.

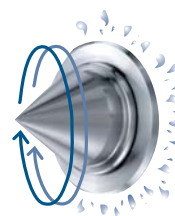
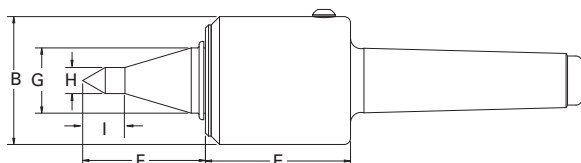
Insist on Roto-Shield™ Technology – Only Available on Royal Live Centers

HIGH-SPEED PRECISION LIVE CENTERS



- ❑ A true high-speed live center — **up to 12,000 rpm**.
- ❑ Lubricated with lightweight spindle oil instead of grease for reduced turning resistance and lower operating temperatures.
- ❑ Precision, preloaded bearing assembly provides exceptional rigidity and accuracy.
- ❑ **Low-profile head** and extended point combine to offer superior tool clearance.
- ❑ Exclusive Roto-Shield™ coolant slinger and upgraded seal provide outstanding bearing protection for extended operating life.
- ❑ Body and point are hardened and ground for strength and long life.
- ❑ Available in both steel and carbide-tipped point models.

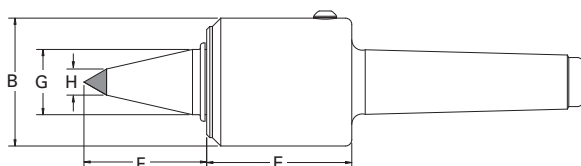
HIGH-SPEED PRECISION LIVE CENTERS



**EXCLUSIVE ROYAL
ROTO-SHIELD™
TECHNOLOGY**

Royal High-Speed Precision Live Centers (Steel-Tipped)

TAPER	B	E	F	G	H	I	MAX. SUGGESTED RPM*	WEIGHT OF WORKPIECE (lbs.)	THRUST LOAD (lbs.)	PART NUMBER	PRICE
2 MT	1.70	2.12	1.75	0.88	0.38	0.63	12,000	180	650	10682	\$733
3 MT	1.70	2.12	1.75	0.88	0.38	0.63	12,000	180	650	10683	763
4 MT	2.45	2.78	2.35	1.25	0.50	0.81	12,000	525	1,380	10684	909
5 MT	2.45	2.78	2.35	1.25	0.50	0.81	12,000	525	1,380	10685	943



**✓ High-Pressure
Coolant Approved**

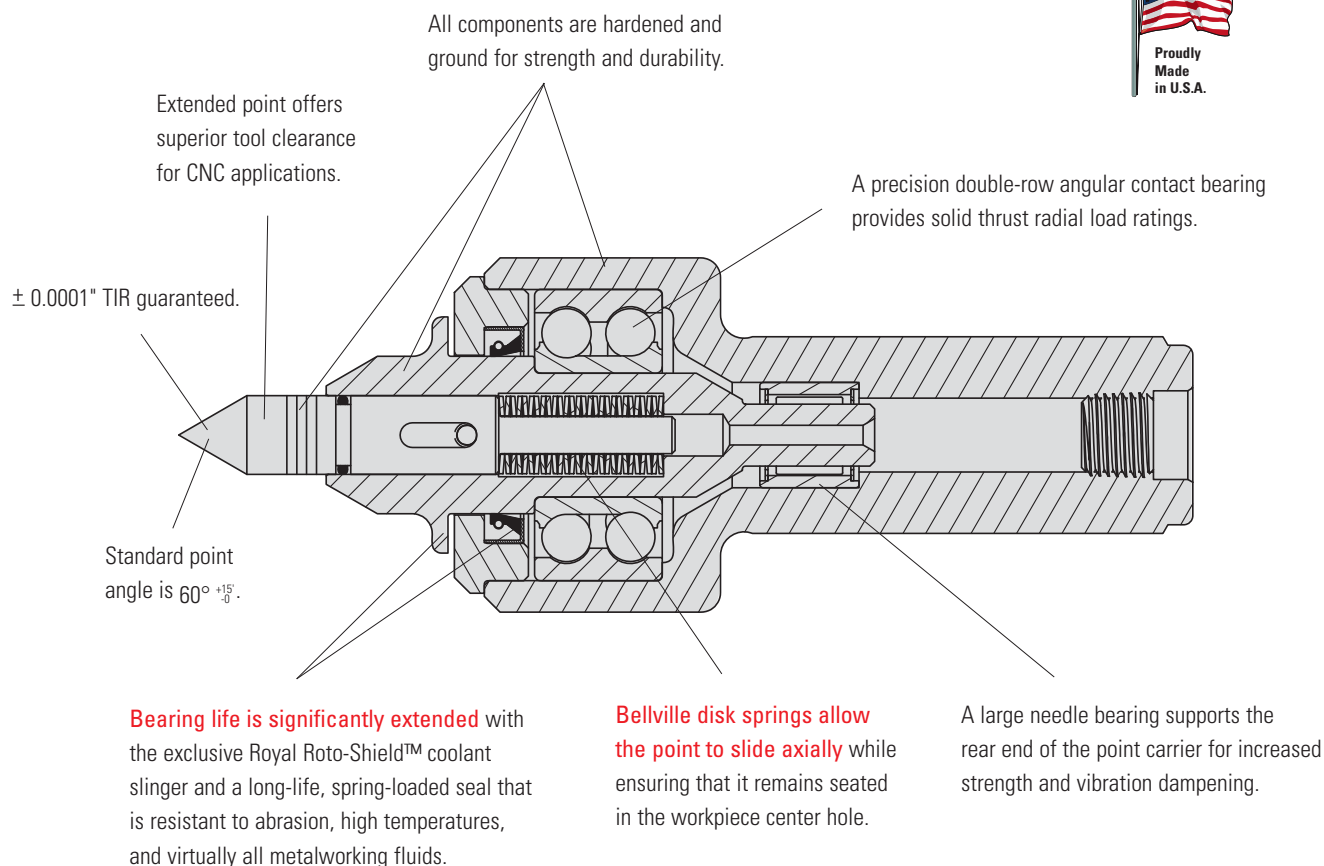
Royal High-Speed Precision Live Centers (Carbide-Tipped)

TAPER	B	E	F	G	H	MAX. SUGGESTED RPM*	WEIGHT OF WORKPIECE (lbs.)	THRUST LOAD (lbs.)	PART NUMBER	PRICE
2 MT	1.70	2.12	1.75	0.88	0.38	12,000	180	650	10692	\$824
3 MT	1.70	2.12	1.75	0.88	0.38	12,000	180	650	10693	849
4 MT	2.45	2.78	2.35	1.25	0.50	12,000	525	1,380	10694	1,032
5 MT	2.45	2.78	2.35	1.25	0.50	12,000	525	1,380	10695	1,070

* Maximum recommended operating limit. Operating above this speed could result in heat build-up and accelerated bearing wear.

Insist on Roto-Shield™ Technology – Only Available on Royal Live Centers

THE ULTIMATE™ MULTI-TASKING LIVE CENTER



Spring-Loaded Point for Lower Turret and Sub-Spindle Applications

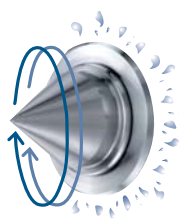
- ❑ Designed specifically for use on the latest multi-tasking **CNC machines with lower turrets and/or sub-spindles.**
- ❑ Spring-loaded point overcomes the lack of hydraulic compensation found on tailstocks, protecting lower turrets and sub-spindles from overloading and/or crashes.
- ❑ Much longer operating life than other spring-type live centers due to the outstanding sealing characteristics of the exclusive Royal Roto-Shield™ coupled with a long-life spring-loaded neoprene seal.
- ❑ Heavy-duty bearing configuration and **optimized spring-pak** make the Royal Ultimate™ the perfect choice for all multi-tasking machines.

THE ULTIMATE™ MULTI-TASKING LIVE CENTER

Spring-Loaded Point for Lower Turret and Sub-Spindle Applications

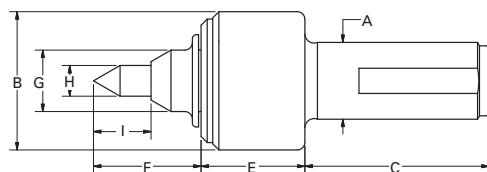


**✓ High-Pressure
Coolant Approved**



**EXCLUSIVE ROYAL
ROTO-SHIELD™
TECHNOLOGY**

A graphical representation laser-marked onto the body of each Ultimate™ Multi-Tasking Live Center takes the guesswork out of the setup process by clearly identifying optimal working parameters.



	SPRING PRESSURE	MAX WORKPIECE WEIGHT
	lbs (kgs)	lbs (kgs)
	206 (93)	355 (161)
	159 (72)	275 (125)
	110 (50)	190 (86)
	58 (26)	100 (45)

The Royal Ultimate™ Multi-Tasking Live Center

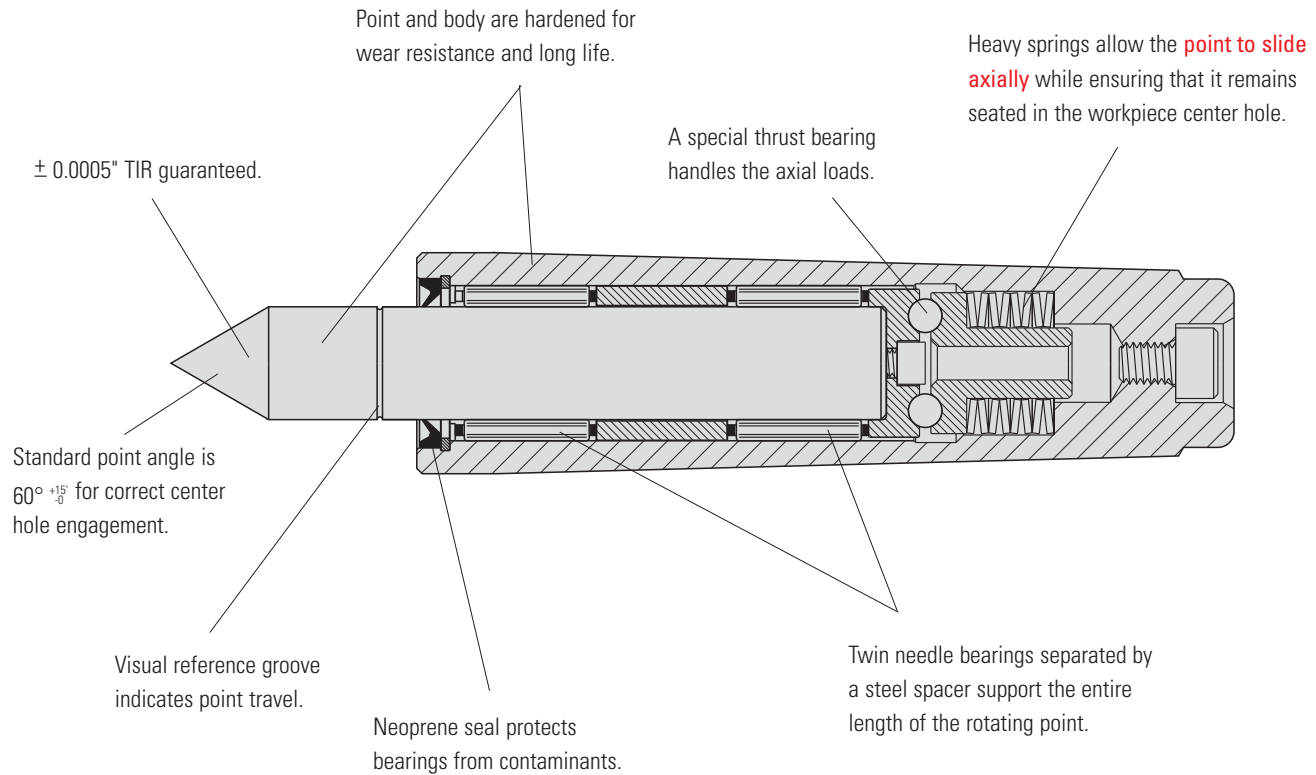
A SHANK STYLE	B	C	E	F	G	H	I	SPRING TRAVEL	MAX. SUGGESTED RPM ¹	WEIGHT OF WORKPIECE (lbs.)	THRUST LOAD (lbs.) ²	PART NUMBER	PRICE
1 1/4 SS	2.25	3.00	1.69	1.75	1.00	0.50	0.94	0.25	5,000	350	200	10590	\$729
4 MT	2.25	N/A	1.69	1.75	1.00	0.50	0.94	0.25	5,000	350	200	10592	729
5 MT	2.25	N/A	1.69	1.75	1.00	0.50	0.94	0.25	5,000	350	200	10594	765

¹ Maximum recommended operating limit. Operating above this speed could result in heat build-up and accelerated bearing wear.

² Exceeding this value will bottom-out springs.

Insist on Roto-Shield™ Technology – Only Available on Royal Live Centers

SPRING TYPE LIVE CENTERS

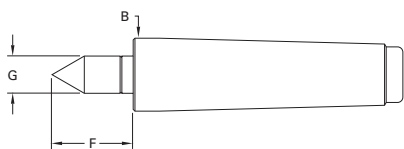


- ❑ Unique spring-loaded point compensates for workpiece thermal expansion.
- ❑ Low-profile design provides **outstanding tool clearance**.
- ❑ Available with standard and extended points.
- ❑ Can be used in the turret **of sub-spindle machines** to overcome a lack of hydraulic compensation.



**Check out the Royal Live Center
Video at www.livecenters.com**

SPRING TYPE LIVE CENTERS



Royal Spring Type Live Centers — Standard Point

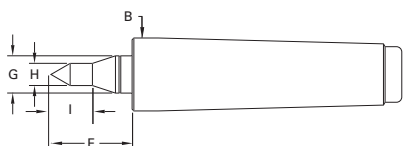
TAPER	B	F	G	SPRING TRAVEL	MAX. SUGGESTED RPM ¹	WEIGHT OF WORKPIECE (lbs.)	THRUST LOAD (lbs.) ²	PART NUMBER	PRICE
2 MT	0.700	0.88	0.39	0.11	5,000	540	150	10522	\$357
3 MT	0.938	1.16	0.55	0.14	5,000	940	315	10523	418
4 MT	1.231	1.38	0.63	0.18	4,500	1,400	435	10524	494
5 MT	1.748	2.00	1.10	0.19	4,500	2,340	785	10525	733

Straight Shank Models

1" Dia.	1.00	1.16	0.55	0.14	5,000	940	315	10526	\$418
1 1/4" Dia.	1.25	1.38	0.63	0.18	4,500	1,400	435	10527	494

¹ Maximum recommended operating limit. Operating above this speed could result in heat build-up and accelerated bearing wear.

² Exceeding this value will bottom-out springs.



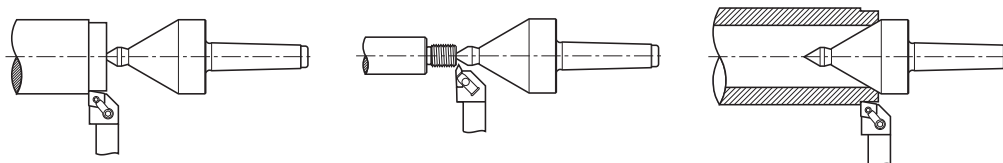
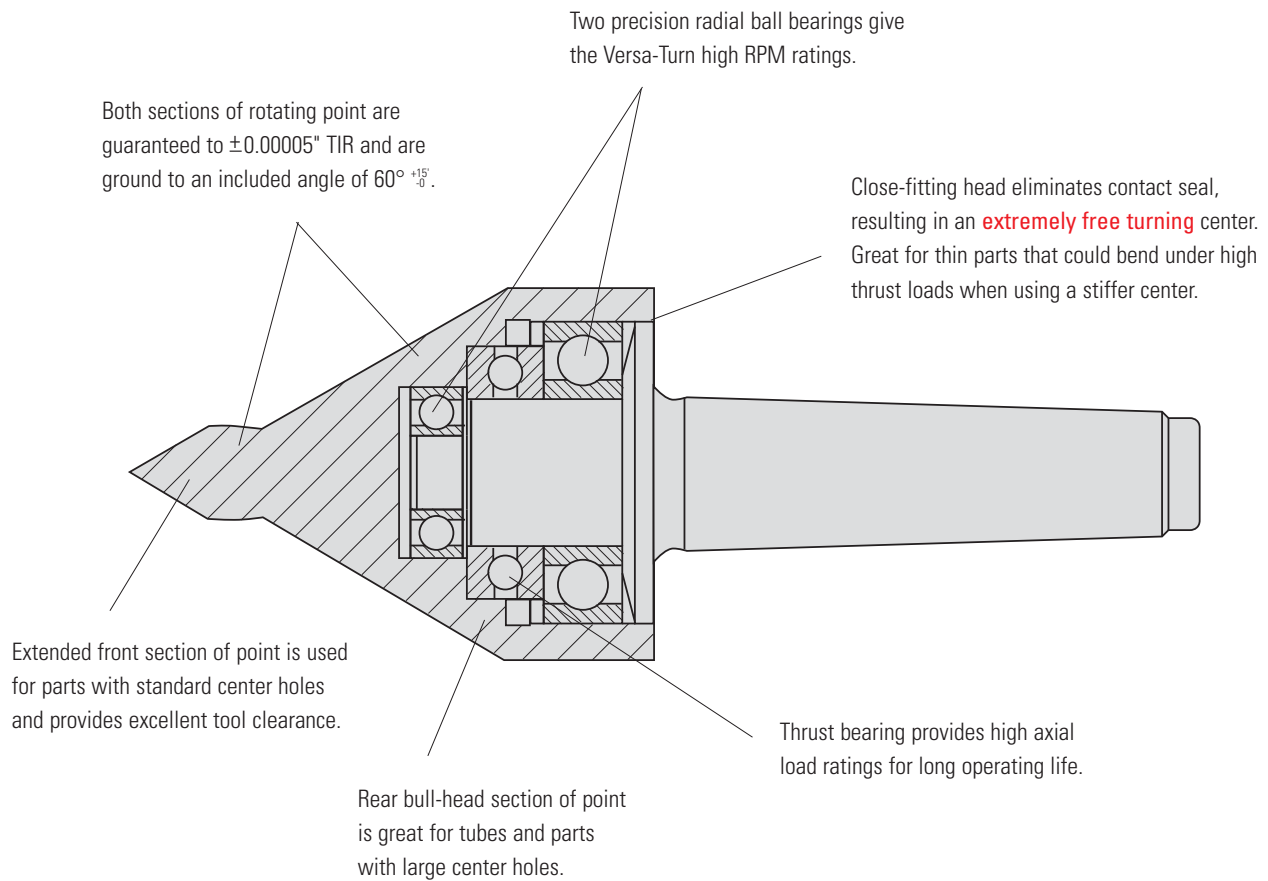
Royal Spring Type Live Centers — CNC Point

TAPER	B	F	G	H	I	SPRING TRAVEL	MAX. SUGGESTED RPM ¹	WEIGHT OF WORKPIECE (lbs.)	THRUST LOAD (lbs.) ²	PART NUMBER	PRICE
2 MT	0.700	0.88	0.39	0.19	0.35	0.11	5,000	150	150	10532	\$383
3 MT	0.938	1.16	0.55	0.25	0.47	0.14	5,000	260	315	10533	441
4 MT	1.231	1.38	0.63	0.38	0.70	0.18	4,500	580	435	10534	523
5 MT	1.748	2.00	1.10	0.50	0.93	0.19	4,500	1,050	785	10535	733

¹ Maximum recommended operating limit. Operating above this speed could result in heat build-up and accelerated bearing wear.

² Exceeding this value will bottom-out springs.

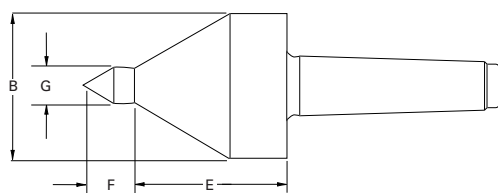
VERSA-TURN LIVE CENTERS



- ❑ An excellent **multi-purpose live center** designed to handle most common turning jobs.
- ❑ The Royal Versa-Turn is extremely free turning, making it an **ideal choice for thin parts** that could bend when subjected to high thrust loads.
- ❑ The unique design is really two centers in one, providing great value for cost-conscious manufacturers.



VERSA-TURN LIVE CENTERS



**Extremely Free Turning –
Great for Thin Parts**

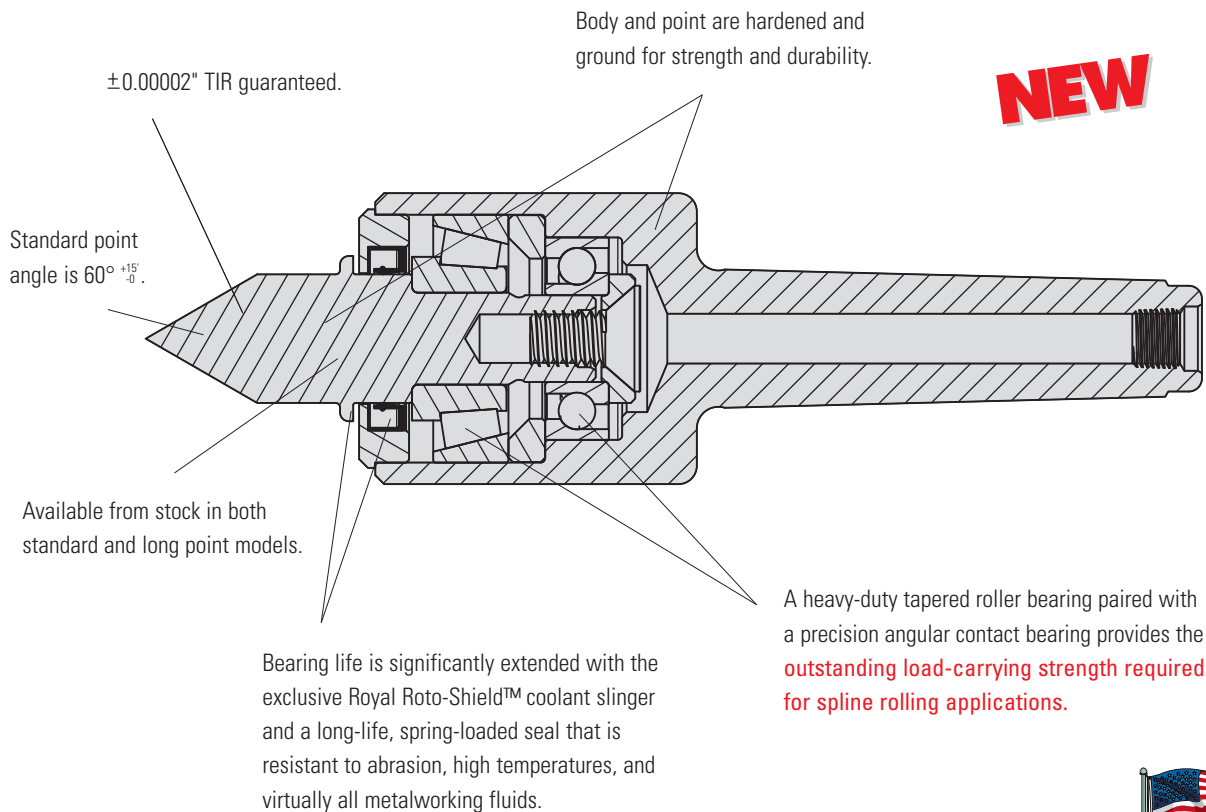
Royal Versa-Turn Live Centers

TAPER	B	E	F	G	MAX. SUGGESTED RPM*	WEIGHT OF WORKPIECE (lbs.)	THRUST LOAD (lbs.)	PART NUMBER	PRICE
2 MT	2.13	2.22	0.74	0.50	5,000	330	2,160	10831	\$353
3 MT	2.13	2.22	0.74	0.50	5,000	330	2,160	10832	349
3 MT HD	2.50	2.60	0.93	0.63	4,000	685	5,000	10833	393
4 MT	2.50	2.60	0.93	0.63	4,000	685	5,000	10834	406
4 MT HD	3.38	3.15	1.12	0.75	3,500	1,165	5,700	10835	550
5 MT	3.38	3.15	1.12	0.75	3,500	1,165	5,700	10836	579

* Maximum recommended operating limit. Operating above this speed could result in heat build-up and accelerated bearing wear.

SPLINE ROLLING LIVE CENTERS

NEW

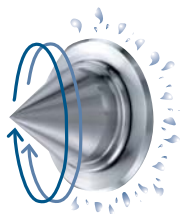


- ❑ Spline rolling is a cold forming process often **used in the production of transmission shafts** for its speed and efficiency.
- ❑ Royal spline rolling live centers are specially constructed with a heavy duty tapered roller bearing paired with a precision angular contact bearing to handle the very high loads produced during the spline rolling process.
- ❑ Accuracy is guaranteed at an industry leading ± 0.00002 " TIR.
- ❑ The exclusive Royal Roto-Shield™ coolant slinger and upgraded seal provide outstanding bearing protection for extended operating life.
- ❑ Available from stock in **standard and long-point models to suit a wide range of applications.**



**Check out the Royal Live Center
Video at www.livecenters.com**

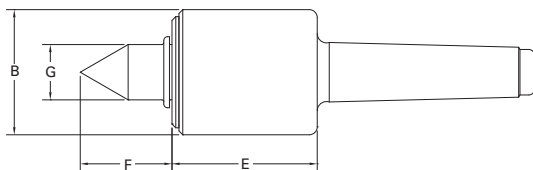
SPLINE ROLLING LIVE CENTERS



**EXCLUSIVE ROYAL
ROTO-SHIELD™
TECHNOLOGY**



NEW

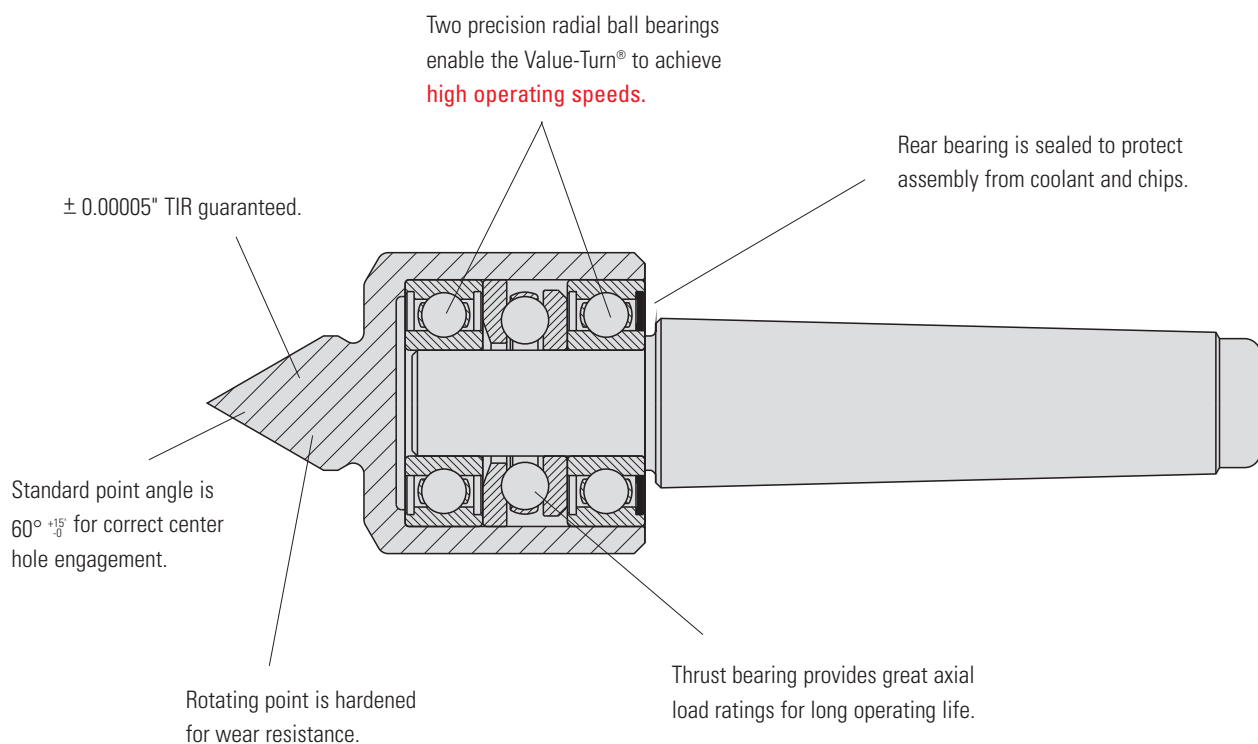


**✓ High-Pressure
Coolant Approved**

Royal Spline Rolling Live Centers – Standard and Long Point

TAPER	B	E	F	G	MAX. SUGGESTED RPM*	WEIGHT OF WORKPIECE (lbs.)	THRUST LOAD (lbs.)	PART NUMBER	PRICE
3 MT	1.98	2.30	1.45	0.88	5,000	250	1,040	10880	\$632
3 MT	1.98	2.30	2.95	0.88	5,000	140	1,040	10882	632
4 MT	1.98	2.17	1.45	0.88	5,000	250	1,040	10884	672
4 MT	1.98	2.17	2.95	0.88	5,000	140	1,040	10886	672

Insist on Roto-Shield™ Technology – Only Available on Royal Live Centers



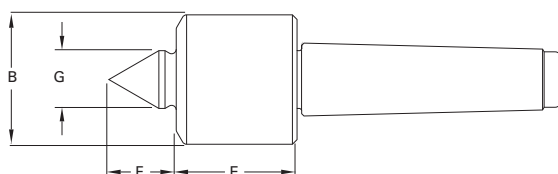
- ❑ A **sturdy, low-cost center** designed for light/medium-duty turning applications.
- ❑ Precision three-bearing design enables the Royal Value-Turn® to achieve both high RPM's and good load ratings.
- ❑ A great American-made alternative to low quality imports.



**Check out the Royal Live Center
Video at www.livecenters.com**

VALUE-TURN® LIVE CENTERS

ROYAL
PRODUCTS
Optimize everything.

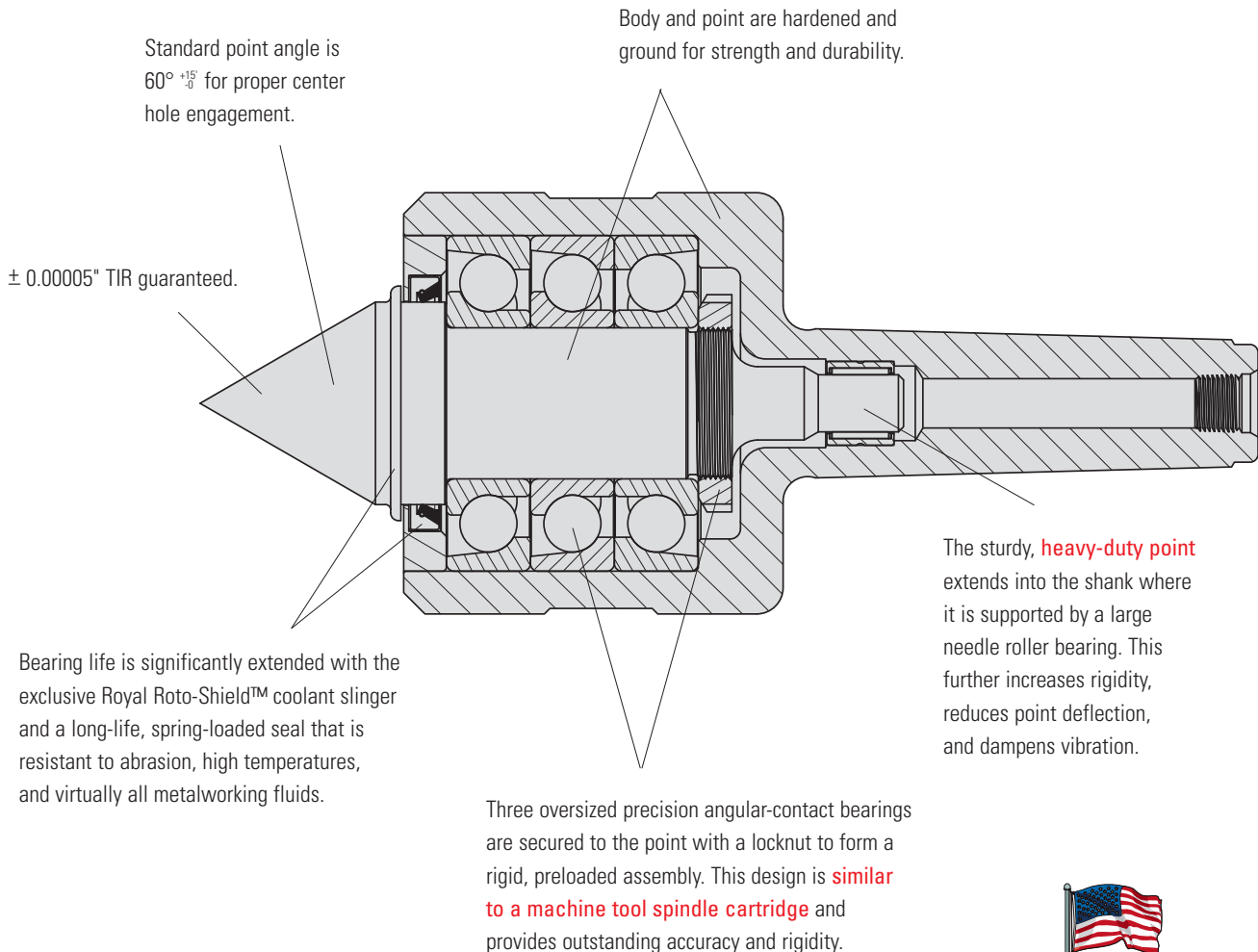


Royal Value-Turn® Live Centers

TAPER	B	E	F	G	MAX. SUGGESTED RPM*	WEIGHT OF WORKPIECE (lbs.)	THRUST LOAD (lbs.)	PART NUMBER	PRICE
1 MT	1.68	1.56	0.88	0.75	5,000	390	3,730	10851	\$225
2 MT	1.68	1.56	0.88	0.75	5,000	390	3,730	10852	208
3 MT	1.68	1.56	0.88	0.75	5,000	390	3,730	10853	224
4 MT	2.45	2.03	1.20	1.13	4,500	750	4,990	10854	273
5 MT	2.45	2.03	1.20	1.13	4,500	750	4,990	10855	306

* Maximum recommended operating limit. Operating above this speed could result in heat build-up and accelerated bearing wear.

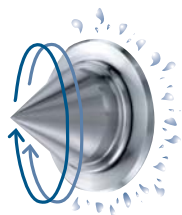
SUPER-QUAD EXTRA HEAVY-DUTY LIVE CENTERS



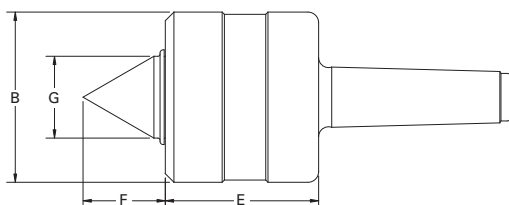
- ❑ Designed for turning **very large, heavy parts** — up to 12,000 lbs.
- ❑ Three oversized angular contact bearings and a large needle roller bearing combine to form a very strong, rigid assembly.
- ❑ Sturdy, large diameter point for minimal deflection.
- ❑ Exclusive Roto-Shield™ coolant slinger and upgraded seal provide outstanding bearing protection for extended operating life.

SUPER-QUAD EXTRA HEAVY-DUTY LIVE CENTERS

ROYAL
PRODUCTS
Optimize everything.



**EXCLUSIVE ROYAL
ROTO-SHIELD™
TECHNOLOGY**



**✓ High-Pressure
Coolant Approved**

Royal Super-Quad Extra Heavy-Duty Live Centers

TAPER	B	E	F	G	MAX. SUGGESTED RPM*	WEIGHT OF WORKPIECE (lbs.)	THRUST LOAD (lbs.)	PART NUMBER	PRICE
4 MT	3.70	3.31	1.77	1.63	4,000	3,325	4,800	10364	\$1,888
5 MT	4.94	4.45	2.39	2.38	3,000	10,650	13,220	10365	2,648
6 MT	4.94	4.33	2.39	2.38	3,000	10,650	13,220	10368	2,814
6 MT	6.94	5.69	3.23	3.13	2,500	12,130	25,920	10366	5,191

* Maximum recommended operating limit. Operating above this speed could result in heat build-up and accelerated bearing wear.

Insist on Roto-Shield™ Technology – Only Available on Royal Live Centers

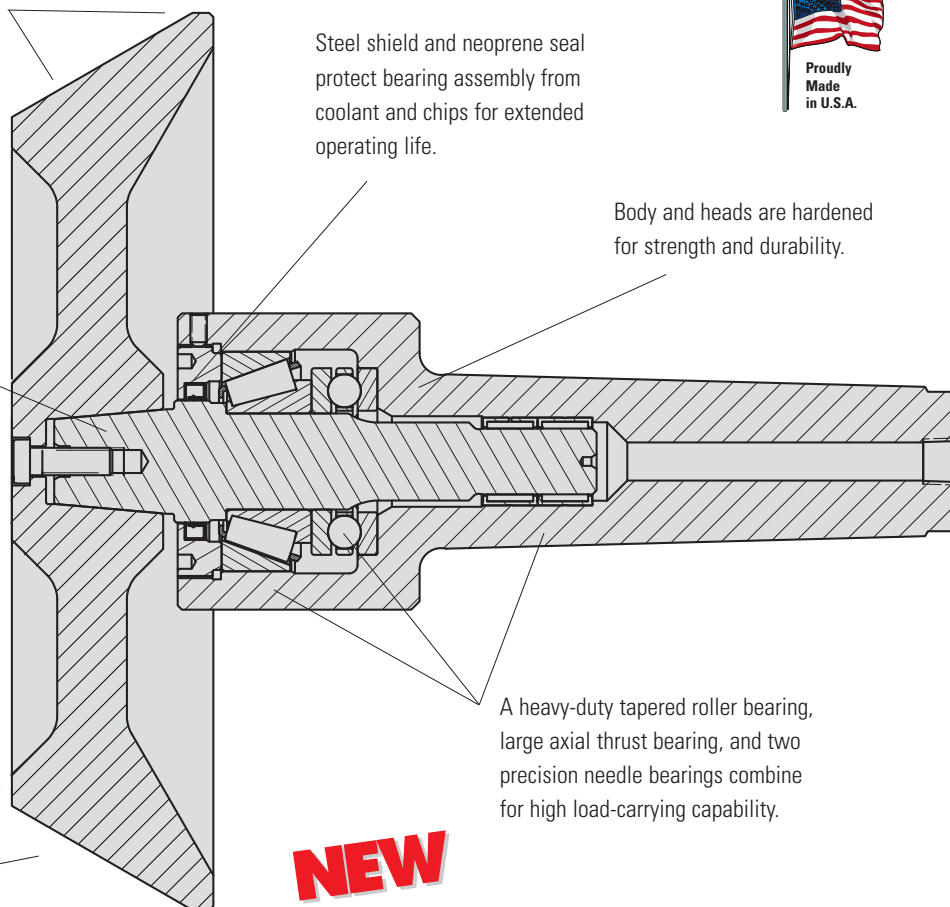
“OIL COUNTRY” BIG-BORE BULL HEAD LIVE CENTERS

The major and minor diameters of each head extend above and below nominal sizing – enabling each head to **cover a wider range of workpieces.**

Large capacity modular heads securely locate on a precision tapered shaft for maximum accuracy and rigidity.

+/- 0.00025" TIR guaranteed.

Head angle is $60^{\circ} \begin{smallmatrix} +15^{\circ} \\ -0^{\circ} \end{smallmatrix}$ for proper part engagement.



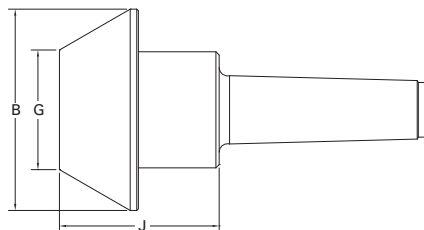
- ❑ Designed **specifically for machining large diameter pipes for the oil and gas industry**, but suitable for all large-bore applications.
- ❑ In contrast to standard bull head live centers, the modular head design of Royal “Oil Country” Big-Bore centers positions the workpiece closer to the bearing assembly for greater rigidity and longer operating life.
- ❑ Interchangeable **heads are relieved to achieve the optimal strength/mass ratio**, and are sized to cover a wider range of bore sizes with fewer models.
- ❑ Bearing configuration consisting of a heavy-duty tapered roller bearing, a large axial thrust bearing, and two precision needle bearings provides exceptional accuracy and rigidity under the most demanding production conditions.

"OIL COUNTRY" BIG-BORE BULL HEAD LIVE CENTERS

Specifications

TAPER	HEAD PART NUMBER	B	G	J	MAX SUGGESTED RPM*	WEIGHT OF WORKPIECE (LBS.)	THRUST LOAD (LBS.)
5 MT	10791	4.62	1.63	5.31	2,050	4,500	2,650
5 MT	10792	7.37	4.38	4.59	1,300	4,500	2,650
5 MT	10793	10.12	7.13	4.59	950	4,500	2,650
5 MT	10794	12.87	9.88	4.59	750	4,500	2,650
5 MT	10795	15.62	12.63	4.59	600	4,500	2,650

TAPER	HEAD PART NUMBER	B	G	J	MAX SUGGESTED RPM*	WEIGHT OF WORKPIECE (LBS.)	THRUST LOAD (LBS.)
6 MT	10791	4.62	1.63	6.57	2,050	11,000	3,500
6 MT	10792	7.37	4.38	5.85	1,300	11,000	3,500
6 MT	10793	10.12	7.13	5.85	950	11,000	3,500
6 MT	10794	12.87	9.88	5.85	750	11,000	3,500
6 MT	10795	15.62	12.63	5.85	600	11,000	3,500



NEW

Royal "Oil Country" Big-Bore Bull Head Live Centers

TAPER	PART NUMBER	PRICE*
5 MT	10782	\$878
6 MT	10784	1,290

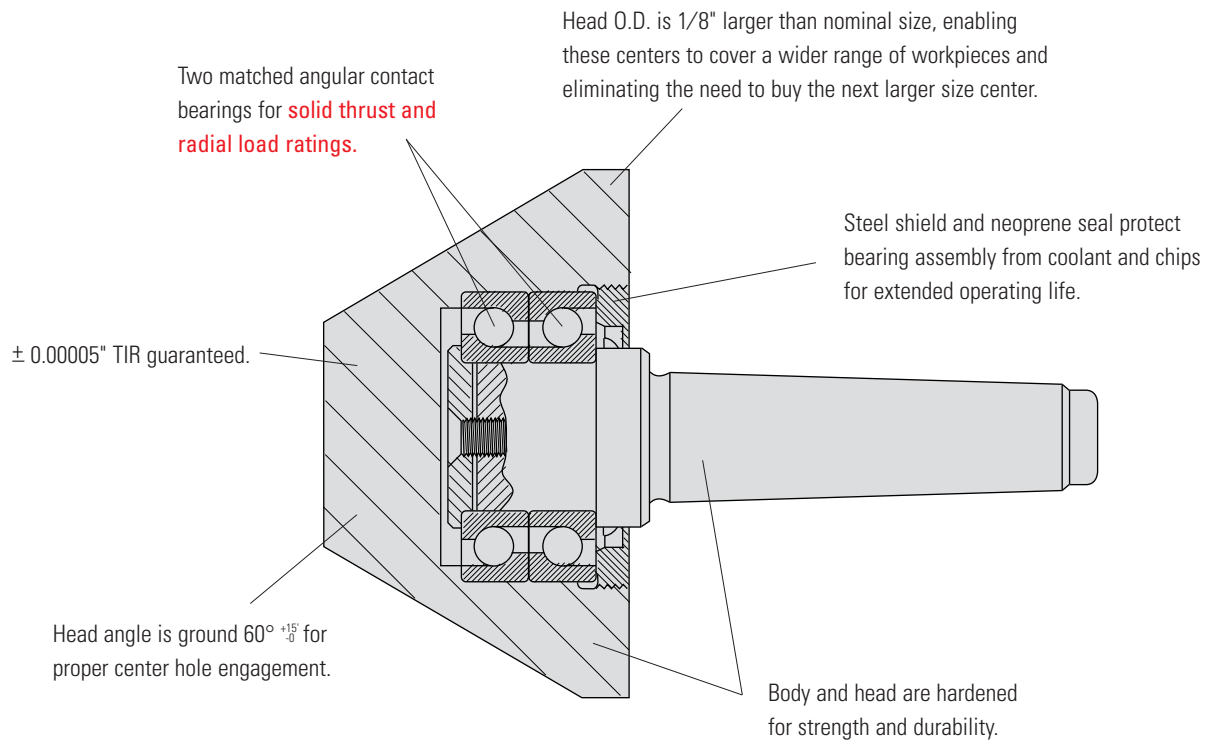
* Head not included. Order Separately.

Modular Heads for Royal "Oil Country" Big-Bore Bull Head Live Centers

RANGE	PART NUMBER	HEAD WEIGHT (LBS.)	PRICE
1.63-4.62	10791	7	\$450
4.38-7.37	10792	18	696
7.13-10.12	10793	33	990
9.88-12.87	10794	51	1,416
12.63-15.62	10795	65	2,469

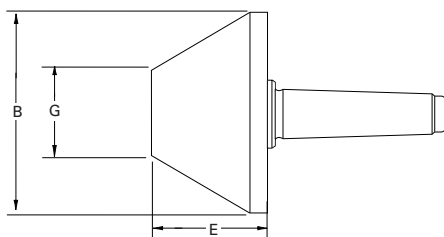


STANDARD BULL HEAD LIVE CENTERS



- ❑ Designed for turning pipes, tubes, and parts with extra-large center holes.
- ❑ Two matched angular contact bearings provide good thrust and radial load ratings.
- ❑ Head diameter is 1/8" over nominal size, enabling these centers to cover a wider range of workpieces.
- ❑ Bull Head design is shorter than a pipe head, reducing potential interference in blind center hole applications and ensuring that the **load is positioned over the bearings for optimum strength**.
- ❑ Extra large capacity models also available. See previous page.

STANDARD BULL HEAD LIVE CENTERS

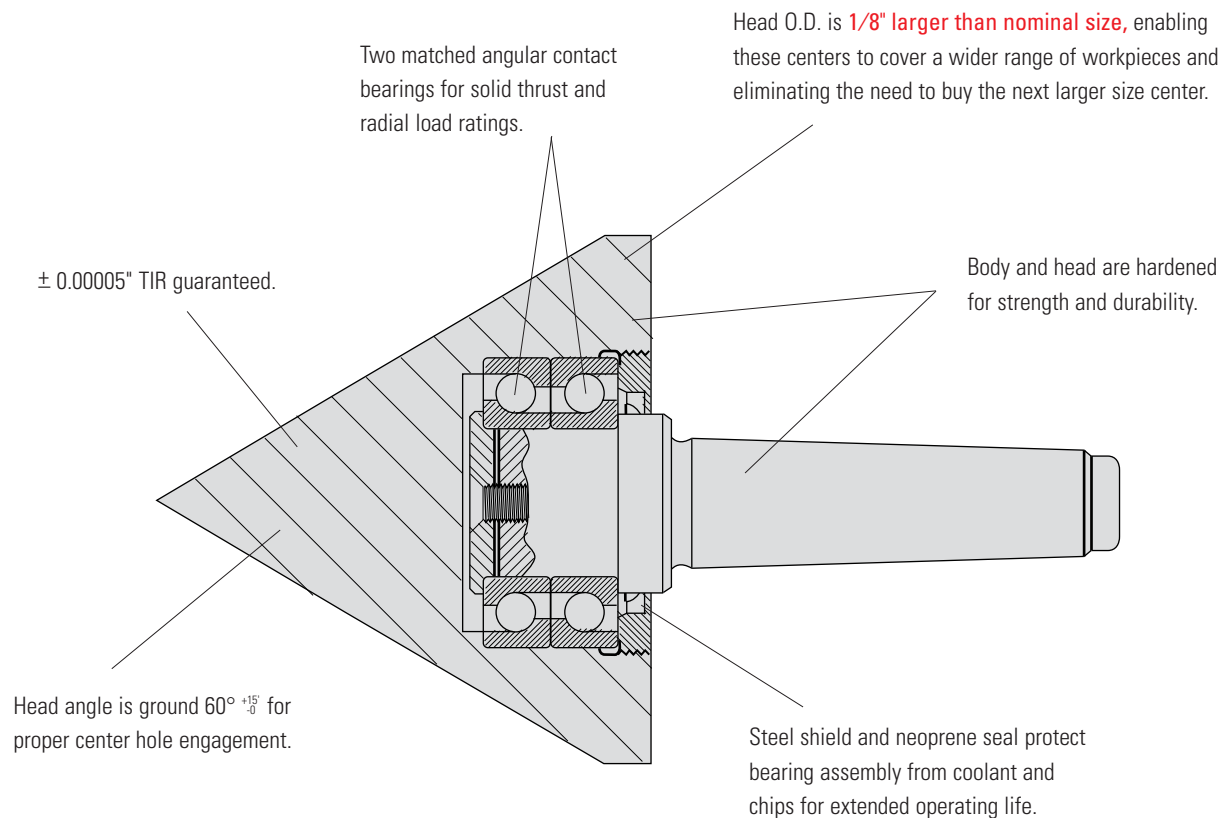


Royal Standard Bull Head Live Centers

TAPER	B	E	G	MAX. SUGGESTED RPM*	WEIGHT OF WORKPIECE (lbs.)	THRUST LOAD (lbs.)	PART NUMBER	PRICE
3 MT	3.15	2.52	1.00	5,000	615	1,780	10902	\$695
3 MT	4.15	3.01	1.25	4,500	860	2,550	10903	862
4 MT	4.15	3.01	1.25	4,500	860	2,550	10904	862
5 MT	4.15	3.01	1.25	4,500	860	2,550	10905	862
4 MT	5.15	3.17	2.00	4,000	1,145	3,450	10906	1,075
5 MT	5.15	3.17	2.00	4,000	1,145	3,450	10907	1,075
5 MT	6.15	3.60	2.50	3,500	1,450	4,500	10909	1,485
6 MT	6.15	3.60	2.50	3,500	1,450	4,500	10910	1,485

* Maximum recommended operating limit. Operating above this speed could result in heat build-up and accelerated bearing wear.

PIPE HEAD LIVE CENTERS

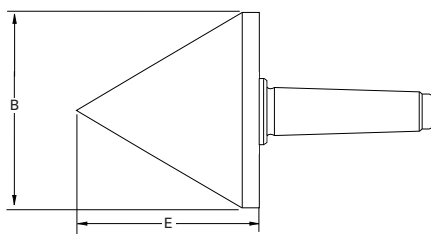


- ❑ Designed for turning **pipes, tubes, and parts with extra-large center holes.**
- ❑ Two matched angular contact bearings provide good thrust and radial load ratings.
- ❑ Head diameter is 1/8" over nominal size, enabling these centers to cover a wider range of workpieces.



**Check out the Royal Live Center
Video at www.livecenters.com**

PIPE HEAD LIVE CENTERS



Royal Pipe Head Live Centers

TAPER	B	E	MAX. SUGGESTED RPM*	WEIGHT OF WORKPIECE (lbs.)	THRUST LOAD (lbs.)	PART NUMBER	PRICE
2 MT	3.15	3.39	5,000	475	1,780	10701	\$709
3 MT	3.15	3.39	5,000	475	1,780	10702	709
4 MT	4.15	4.10	4,500	630	2,550	10704	803
5 MT	4.15	4.10	4,500	630	2,550	10705	803
4 MT	5.15	4.90	4,000	845	3,450	10706	990
5 MT	5.15	4.90	4,000	845	3,450	10707	990

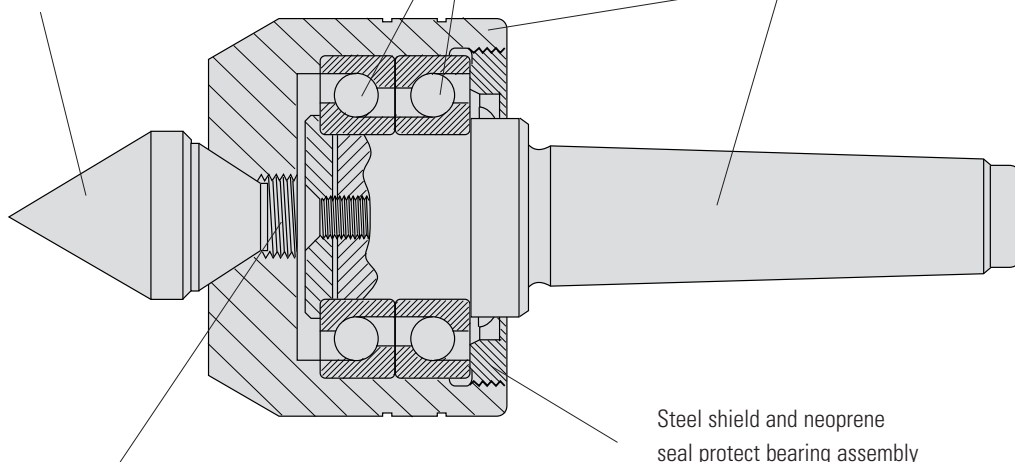
* Maximum recommended operating limit. Operating above this speed could result in heat build-up and accelerated bearing wear.

CHANGEABLE-POINT LIVE CENTERS

*Accuracy is guaranteed to be $\pm 0.00005"$ TIR as long as the points are installed on the live center to which they have been match-ground. When a customer purchases a new point, we recommend sending the live center back to our factory so we can grind the new point to it. This service is free to Royal customers.

Two precision angular contact bearings help achieve good rpm and load ratings.

Shank, head, and points (except #4 blank point), are hardened for wear resistance and long life.



Precision ground tapers and single-lead threads ensure that **points consistently seat in the same location** when they are interchanged, providing maximum accuracy.

Steel shield and neoprene seal protect bearing assembly from coolant and chips for extended operating life.



- ❑ This versatile live center uses interchangeable points to handle many common turning jobs.
- ❑ Each center includes a #3 standard 60° male point. Other points sold separately.
- ❑ $\pm 0.00005"$ TIR guaranteed.*
- ❑ Unique taper/thread design allows points to be easily interchanged and ensures accuracy.
- ❑ Also available with Jarno tapers, Brown and Sharpe tapers, and straight shanks.



**Check out the Royal Live Center
Video at www.livecenters.com**

CHANGEABLE-POINT LIVE CENTERS



Royal Changeable-Point Live Centers

TAPER	B	E	F	G	POINT THREADS	MAX. SUGGESTED RPM*	WEIGHT OF WORKPIECE (lbs.)	THRUST LOAD (lbs.)	PART NUMBER	PRICE
2 MT	2.00	1.85	1.13	0.88	$\frac{5}{8}$ " - 18	6,000	390	960	10002	\$576
3 MT	2.38	2.07	1.25	1.00	$\frac{5}{8}$ " - 18	5,000	500	1,140	10003	628
4 MT	3.50	2.64	1.79	1.50	$\frac{3}{4}$ " - 16	3,500	1,070	1,810	10004	943
5 MT	3.50	2.64	1.79	1.50	$\frac{3}{4}$ " - 16	3,500	1,070	1,810	10005	1,010

* Maximum recommended operating limit. Operating above this speed could result in heat build-up and accelerated bearing wear.



1



2



3



4



5

1. Pipe point for pipe and tubing work.
2. Extra-long male point for additional tool clearance.
3. Standard male point.
4. Blank point made of unhardened 4140 steel.
5. Female point for work not having a center-hole.

Individual Points for Changeable-Point Live Centers

POINT	1 & 2 MT				3 MT				4 & 5 MT			
	DIA.	"F" DIM.	PART NUMBER	PRICE	DIA.	"F" DIM.	PART NUMBER	PRICE	DIA.	"F" DIM.	PART NUMBER	PRICE
1	0.75 - 2.12	1.67	10061	\$294	0.88 - 2.38	1.75	10071	\$237	1.38 - 3.50	2.38	10091	\$370
2	0.88	1.66	10062	206	1.00	1.88	10072	205	1.38	2.34	10082	254
3	0.88	1.13	10063	190	1.00	1.25	10073	195	1.50	1.79	10083	202
4	0.88	1.13	10064	116	1.00	1.25	10074	93	1.38	1.66	10084	128
5	0.19 - 0.91	0.92	10065	184	0.25 - 1.06	1.15	10075	248	0.25 - 1.38	1.28	10085	233

TOOLMAKER'S SET



- Royal Toolmaker's Set includes changeable-point live center, spanner wrench, and the following four points:

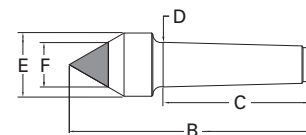
- #1- Bull Head Point
- #2- Extended Point
- #3- Standard Point
- #5- Female Point

- All points in the set are **ground and serialized** to the same live center.
- Additional points available — please see previous page.

Royal Toolmaker's Set

TAPER	PART NUMBER	PRICE
2 MT	10306	\$1,268
3 MT	10307	1,329
4 MT	10308	1,825
5 MT	10309	1,883

OVERSIZED CARBIDE POINT DEAD CENTERS



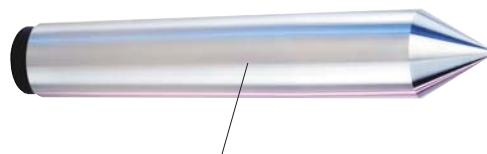
Royal Oversized Carbide Point Dead Centers

- Excellent for grinding and high precision turning applications.
- Oversized carbide point covers a wider range of center holes and **provides great wear resistance.**
- Also available in Jarno and Brown & Sharpe tapers.

TAPER	A	B	C	D	E	CARBIDE DIAMETER	PART	PRICE
	F						NUMBER	
2 MT	4.94	2.56	0.700	1.25	1.00	11524	\$242	
3 MT	5.57	3.19	0.938	1.25	1.00	11525	286	
4 MT	6.75	4.06	1.231	1.75	1.25	11526	390	
5 MT	8.50	5.19	1.748	1.75	1.25	11527	549	

DEAD CENTERS

- Dead centers are typically used for **grinding** and are also sometimes used in **high-precision turning** applications.
- Royal manufactures a wide range of standard dead centers to suit most applications, including: full, half, carbide-tipped, and extended-point models.
- All solid dead centers are made from ball bearing steel and are hardened to Rc 61-63 for wear resistance and durability.
- On carbide-tipped models, the carbide blank is brazed into a **close-tolerance socket for maximum strength and rigidity**.
- All Royal dead centers are ground to an angle of $60^{\circ} \begin{smallmatrix} +15' \\ -3' \end{smallmatrix}$ and guaranteed to $\pm 0.00005''$ TIR.
- Also available in Jarno and Brown & Sharpe tapers.



Ball bearing steel hardened and ground to Rc 61-63 for long life.

Type 1

Standard Dead Center
add "1" to part number below.



Carbide blank is brazed into a close-tolerance socket for maximum strength and rigidity.

Type 2

Standard Dead Center with carbide tip
add "2" to part number below.



Half centers are relieved for grinding wheel clearance.

Type 3

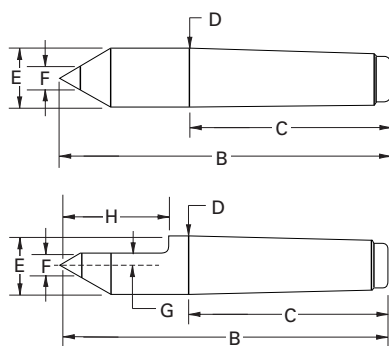
1/2 Dead Center
add "3" to part number below.



A safety groove shows the maximum allowable regrind range for carbide-tipped models.

Type 4

1/2 Dead Center with carbide tip
add "4" to part number below.



Royal Dead Centers

Example: A 2MT dead center with a carbide tip is PART NUMBER 11012.

TAPER A	B	C	D	E	F	G	H	PART NUMBER	TYPE 1	TYPE 2	PRICE	TYPE 3	TYPE 4
2 MT	4.19	2.56	.700	0.700	0.38	0.19	1.38	1101-	\$93	\$122		\$122	\$144
3 MT	5.25	3.19	.938	0.938	0.50	0.22	1.69	1102-	144	166		166	188
4 MT	6.75	4.06	1.231	1.231	0.50	0.25	2.25	1103-	205	218		218	240
5 MT	8.50	5.19	1.748	1.748	0.63	0.38	2.75	1104-	307	338		338	356
6 MT	11.50	7.25	2.494	2.494	0.88	0.50	3.50	1105-	537	643		643	865

Great For Live Tailstocks and Precision Grinding

4140 steel hardened and ground to Rc 61-63 for long life.

Wrench flats for easy removal.



Proudly
Made
in U.S.A.

Extended length provides great tool clearance. Taper maintains strength and rigidity.

All points are ground to an angle of $60^{\circ} \begin{smallmatrix} +15' \\ -0 \end{smallmatrix}$ and guaranteed to $\pm 0.00005"$ TIR.

Carbide blank is brazed into a close-tolerance socket for maximum strength and rigidity.

Extended length for optimum tool clearance.

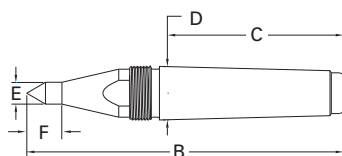
Full diameter point covers a wide range of center holes.

- ☐ Royal threaded dead centers are designed for use in CNC turning centers with **live tailstocks**.
- ☐ These dead centers are also widely used in precision grinding applications.
- ☐ Available in several styles to suit a wide range of applications.
 - CNC Point
 - Carbide-Tipped CNC Point
 - Full Diameter Extended Point
- ☐ Longer than normal gage length on all models provides outstanding clearance.
- ☐ Extraction nut and wrench flats enable easy removal from tailstock/spindle.



Extraction nut allows for easy removal from spindle. Order separately.

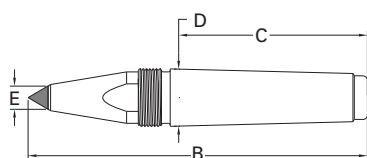
CNC THREADED DEAD CENTERS



Royal CNC Threaded Dead Centers



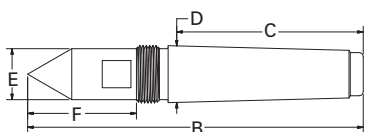
TAPER A	B	C	D	E	F	THREAD	DEAD CENTER		EXTRACTION NUT	
							PART NUMBER	PRICE	PART NUMBER	PRICE
3 MT	5.94	3.19	0.938	0.38	0.63	1"-14	11530	\$171	11550	\$43
3 MT	5.94	3.19	0.938	0.50	0.81	1"-14	11533	171	11550	43
4 MT	7.31	4.06	1.231	0.50	0.81	1 1/4"-14	11531	208	11551	50
4 MT	7.31	4.06	1.231	0.75	1.18	1 1/4"-14	11535	208	11551	50
5 MT	8.44	5.19	1.748	0.50	0.81	1 3/4"-12	11532	296	11552	56
5 MT	8.44	5.19	1.748	0.75	1.18	1 3/4"-12	11537	296	11552	56
5 MT	8.44	5.19	1.748	1.00	1.50	1 3/4"-12	11538	296	11552	56



Royal CNC Threaded Dead Centers with Carbide-Tipped Point



TAPER A	B	C	D	E	THREAD	DEAD CENTER		EXTRACTION NUT	
						PART NUMBER	PRICE	PART NUMBER	PRICE
3 MT	5.94	3.19	0.938	0.38	1"-14	11540	\$233	11550	\$43
4 MT	7.31	4.06	1.231	0.50	1 1/4"-14	11541	280	11551	50
5 MT	8.44	5.19	1.748	0.50	1 3/4"-12	11542	359	11552	56



Royal Full Diameter Extended Point Threaded Dead Centers



TAPER A	B	C	D	E	F	THREAD	DEAD CENTER		EXTRACTION NUT	
							PART NUMBER	PRICE	PART NUMBER	PRICE
3 MT	5.94	3.19	0.938	0.86	1.88	1"-14	11534	\$171	11550	\$43
4 MT	7.31	4.06	1.231	1.11	2.37	1 1/4"-14	11536	208	11551	50
5 MT	8.44	5.19	1.748	1.25	2.36	1 3/4"-12	11539	296	11552	56

CUSTOM DEAD CENTERS

Quotation Sheet

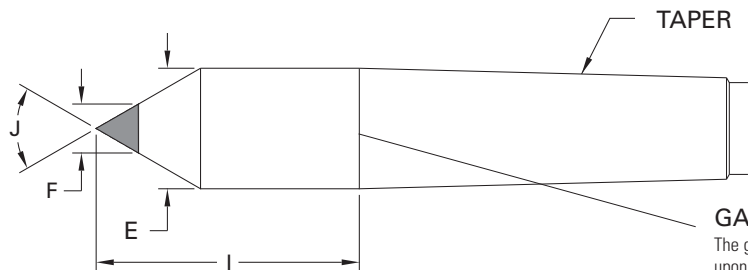


Royal Products welcomes the opportunity to supply you with custom dead centers. Simply fill out this quotation sheet or send us a sketch and we will design a dead center that best suits your needs. If you need technical assistance, please contact a Royal Products applications engineer at 1-800-645-4174.

CONTACT NAME: _____ COMPANY: _____

TEL: _____ FAX: _____

BRIEF DESCRIPTION OF APPLICATION: _____



GAGE LINE

The gage line diameter is an industry standard based upon the machine's tailstock taper. When the center is installed, its gage line will be aligned with the front edge of the tailstock.

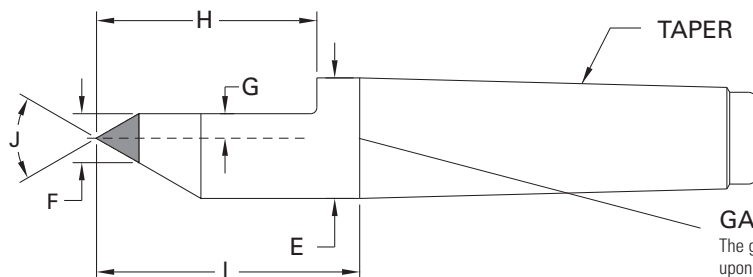
TAPER _____

E. HEAD DIAMETER (if different from standard gage line diameter) _____

F. CARBIDE TIP DIAMETER (if applicable) _____

I. EXTENSION FROM GAGE LINE _____

J. POINT ANGLE ($60^\circ \begin{smallmatrix} +15^\circ \\ -0 \end{smallmatrix}$ unless otherwise indicated) _____



GAGE LINE

The gage line diameter is an industry standard based upon the machine's tailstock taper. When the center is installed, its gage line will be aligned with the front edge of the tailstock.

TAPER _____

E. HEAD DIAMETER (if different from standard gage line diameter) _____

F. CARBIDE TIP DIAMETER (if applicable) _____

G. CLEARANCE HEIGHT (indicate from centerline) _____

H. CLEARANCE LENGTH _____

I. EXTENSION FROM GAGE LINE _____

J. POINT ANGLE ($60^\circ \begin{smallmatrix} +15^\circ \\ -0 \end{smallmatrix}$ unless otherwise indicated) _____

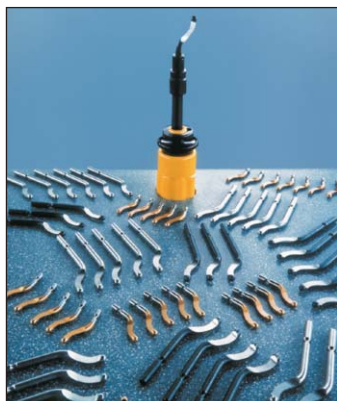
Note: If this quotation sheet does not allow you to clearly express your requirements, please fax us a separate sketch or print with all relevant information.



DEBURRING TOOLS

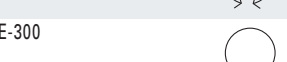
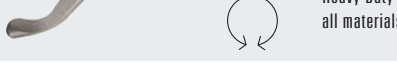
THE WORLD'S BEST DEBURRING
TOOLS AND BLADES

DEBURRING BLADES



**Great
Low
Prices**

STANDARD-DUTY B-BLADES		BLADES PER PACKAGE	PART NUMBER	PRICE PER PACKAGE
B-10		10	22110	\$9.85
		Our most popular blade. HSS for steel and aluminum.		
B-10A		10	22109	10.55
		Similar to B-10 blade but has a thinner profile. High cobalt content for long life. Also great for plastic.		
B-10L		10	22113	9.85
		HSS counterclockwise operation in steel and aluminum; ideal for lefties.		
B-10T		10	22112	21.75
		Titanium coated HSS for longer life; for steel and aluminum.		
B-10C		10	22117	62.15
		Solid carbide for hardened material.		
B-15		10	22118	13.85
		Very fine, precise blade; great for plastic.		
B-20		10	22120	9.85
		HSS for brass and cast iron; can rotate clockwise and counterclockwise.		
B-20C		10	22121	65.25
		Solid carbide for hardened material.		
B-30		10	22130	16.85
		HSS; removes internal and external burrs simultaneously from holes drilled into tubing and sheet metal.		
B-60		10	22135	25.05
		HSS for internal deburring of hard to reach locations.		

HEAVY-DUTY E-BLADES		BLADES PER PACKAGE	PART NUMBER	PRICE PER PACKAGE
E-100		10	22025	\$12.25
		Heavy Duty HSS for steel and aluminum.		
E-100A		10	22034	15.35
		Heavy Duty M-42 steel, good for plastic and hard materials.		
E-100L		10	22026	12.25
		Heavy Duty HSS for counterclockwise operation in steel and aluminum; ideal for lefties.		
E-100T		10	22027	25.25
		Heavy Duty titanium coated HSS for steel and aluminum.		
E-200		10	22030	12.25
		Heavy Duty HSS for brass and cast iron, bi-directional.		
E-300		10	22040	16.00
		Heavy Duty HSS; removes internal and external burrs simultaneously from holes drilled into tubing & sheet metal.		
E-350		10	22035	12.90
		Heavy Duty HSS for straight edges on all materials.		
E-600		10	22036	25.55
		Heavy Duty HSS; designed to facilitate deburring in the most inaccessible locations.		
E-101		10	22037	14.50
		Heavy Duty HSS for holes as small as 7/64" dia. in steel and aluminum.		
E-102		10	22039	14.50
		Heavy Duty HSS for small holes in brass and cast iron; can rotate clockwise and counterclockwise.		
E-1500		10	22046	14.10
		Heavy Duty HSS for holes as small as 1/16" dia. in steel and aluminum.		

Please contact Royal for special pricing on very large quantities.

DEBURRING TOOLS

Royal Zip/Burr™ B-Set



- ☐ Takes all B-series blades.
- ☐ Includes one B-10 blade and one B-20 blade.
- ☐ Holder telescopes from 1/2" to 5".
- ☐ Handle has storage compartment for spare blades.
- ☐ Blade can be inserted at 90° for deburring cross holes.
- ☐ Handle has lifetime guarantee — if it breaks, return it and we will replace it at no charge.

DESCRIPTION	PACKAGE OF	PART NUMBER	PRICE
Zip/Burr B-Set	1	22600	\$9.20
Zip/Burr Handle Only	1	22610	5.00
Zip/Burr B-Holder Only	1	22614	5.05

Royal Multi/Burr-5



- ☐ Blades can be stored in lightweight plastic handle.
- ☐ Blades are easily changed by depressing locking button.
- ☐ Handle has lifetime guarantee.
- ☐ Comes with five blades — one each of E-100, E-200, E-350, E-101 and E-102.

DESCRIPTION	PACKAGE OF	PART NUMBER	PRICE
Multi/Burr Complete w/5 Blades	1	22022	\$10.40
Multi/Burr Handle Only	1	22570	6.20

Royal Zip/Burr™ E-Set



- ☐ Takes all heavy-duty E-series blades.
- ☐ Includes one E-100 blade, one E-200 blade and one E-300 blade.
- ☐ Handle has storage compartment for spare blades.
- ☐ Holder telescopes from 1/2" to 5".
- ☐ Handle has lifetime guarantee — if it breaks, return it and we will replace it at no charge.

DESCRIPTION	PACKAGE OF	PART NUMBER	PRICE
Zip/Burr E-Set	1	22620	\$10.70
Zip/Burr Handle Only	1	22610	5.00
Zip/Burr E-Holder Only	1	22633	5.05

Royal Double-Header Versa/Burr



- ☐ Double-header can be used with both B and E blades.
- ☐ Telescopes from 1"–4½"
- ☐ Includes one B-10 blade and one B-20 blade.
- ☐ Handle has lifetime guarantee.

DESCRIPTION	PACKAGE OF	PART NUMBER	PRICE
Complete Double-Header Versa/Burr	1	22105	\$11.70
Versa/Burr Handle Only	1	22107	5.00
B/E Holder Only	1	22108	6.25

DEBURRING TOOLS

Royal Disposable Burr



- ☐ Low-priced yet can handle almost every deburring job.
- ☐ Consists of heavy-duty E-100 blade, handle, and handy pocket clip.
- ☐ Non-replaceable blade.
- ☐ For removing burrs from steel and aluminum.

DESCRIPTION	PACKAGE OF	PART NUMBER	PRICE
Disposable Burr	10	22050	\$38.05

Royal Countersink Zip/Burr™



- ☐ Very useful for chamfering deep holes.
- ☐ Includes 3/4" countersink.

DESCRIPTION	PACKAGE OF	PART NUMBER	PRICE
Complete Countersink	1	22650	\$26.55
Zip/Burr C-Holder Only	1	22665	4.85
C-12 1/2" Countersink Only	1	22155	14.95
C-20 3/4" Countersink Only	1	22160	18.70
C-30 1 1/8" Countersink Only	1	22165	27.25

Royal E-Blade Slim-Grip



- ☐ Comes with one replaceable E-100 blade and handle.
- ☐ Uses heavy-duty E-Blades.
- ☐ Great value.

DESCRIPTION	PACKAGE OF	PART NUMBER	PRICE
E-Blade Slim Grip	10	22172	\$72.40

Royal Internal Scraper Zip/Burr™



- ☐ Includes special blade for deburring cross holes.
- ☐ D-66 blade is held in D-holder by a set screw.



DESCRIPTION	PACKAGE OF	PART NUMBER	PRICE
Complete Internal Scraper	1	22710	\$15.30
Zip/Burr D-Holder Only	1	22695	6.25
HSS Internal Scraper Blade Only (D-66)	10	22302	55.70

DEBURRING TOOLS

Royal Mini-Scraper Zip/Burr™



- ❑ Fine triangular scraper is ideal for tool and moldmaking work.
- ❑ Blade is secured to D-holder with a set screw.
- ❑ Includes D-50 mini blade.

Dimensions

BLADE	
D-50	3/32"

DESCRIPTION	PACKAGE OF	PART NUMBER	PRICE
Complete Mini-Scraper Zip/Burr	1	22680	\$16.50
Zip/Burr D-Holder Only	1	22695	6.25
HSS Mini-Scraper Blade Only (D-50)	10	22276	64.50

Royal Ceramic Scraper



- ❑ Self-lubricating fixed ceramic blade.
- ❑ Interchangeable blade has a very long life.
- ❑ Great for all materials: plastics, soft metals, hard metals, etc.

DESCRIPTION	PACKAGE OF	PART NUMBER	PRICE
Ceramic Scraper	1	22151	\$19.95
Replacement Ceramic Blade	1	22152	15.30
Ceramic Scraper Handle Only	1	22149	6.15

Royal Scraper Zip/Burr™

Dimensions

BLADE	
T-40	5/32"
T-60	1/4"



- ❑ Replaceable scraper blades thread into the Zip/Burr holder.
- ❑ Available with either a T-40 or T-60 blade. These blades are similar in size to the T-80 and T-120 but they are only half as long.
- ❑ Blades have a #10 NF thread and are interchangeable with other brand blades.

DESCRIPTION	PACKAGE OF	PART NUMBER	PRICE
Standard Scraper with T-40 Blade	1	22730	\$14.05
Standard Scraper with T-60 Blade	1	22745	18.70
Zip/Burr T-Holder Only	1	22768	5.05
T-40 Blade Only	1	22760	5.85
T-60 Blade Only	1	22764	8.50

Royal Slim Grip Scraper

Dimensions

BLADE	
T-80	5/32"
D-55	3/32"



- ❑ Special Slim-Grip design for deburring in hard-to-reach locations.
- ❑ 22410 includes aluminum handle and one double-sided high speed steel T-80 blade.
- ❑ Knurled locking collar to control blade extension.
- ❑ 22420 includes aluminum handle and one single-sided solid carbide D-55 blade.

DESCRIPTION	PACKAGE OF	PART NUMBER	PRICE
Slim-Grip Scraper w/T-80 HSS Blade	1	22410	\$17.50
Slim-Grip Scraper w/D-55 Carbide Blade	1	22420	22.20
T-80 HSS Blade Only	10	22432	82.15
D-55 Carbide Blade Only	10	22442	116.40

DEBURRING TOOLS

Royal Rotating Ceramic Burr

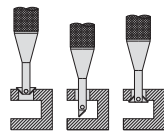
NEW



- ❑ Interchangeable self-lubricating ceramic blade.
- ❑ Blade rotates like a traditional deburring tool.
- ❑ Will deburr holes, contours, and edges.
- ❑ Two blade styles available:
 - Model 65 – for soft abrasive plastics
 - Model 75 – for hard abrasive plastics

DESCRIPTION	PACKAGE OF	PART NUMBER	PRICE
Rotating Ceramic Burr – 65	1	22190	\$24.45
Rotating Ceramic Burr – 75	1	22192	24.45
Ceramic Burr Handle Only	1	22194	12.35
Ceramic Blade 65 Only	1	22196	12.90
Ceramic Blade 75 Only	1	22198	12.90

Royal Reversible Countersink



- ❑ Deburrs both inside and outside of very small holes.
- ❑ Can be used in both clockwise and counterclockwise directions.
- ❑ To use, hold between fingers and rotate back and forth.
- ❑ To insert/withdraw blade into/from hole, push knob and release slowly.

DESCRIPTION	PACKAGE OF	PART NUMBER	PRICE
Complete Mini Reversible Countersink	1	22455	\$23.00
Complete Standard Reversible Countersink	1	22465	23.50
Complete Large Reversible Countersink	1	22472	30.70
R-1 Mini Blade Only ($\frac{1}{8}$ " – $\frac{7}{32}$ ")	1	22137	11.35
R-2 Standard Blade Only ($\frac{13}{64}$ " – $\frac{11}{32}$ ")	1	22139	12.30
R-3 Large Blade Only ($\frac{25}{64}$ " – $\frac{27}{32}$ ")	1	22136	13.85

Royal Double Burr



- ❑ Simultaneously removes burrs from both sides of workpiece from $\frac{1}{32}$ " to $\frac{1}{2}$ " thick.
- ❑ Safety guard protects fingers.
- ❑ Unique round cutting blades can be rotated and reversed for long life.
- ❑ Blades made of M-2 steel, hardened to 64 Rc.

DESCRIPTION	PACKAGE OF	PART NUMBER	PRICE
Double Burr w/Guard and Two Blades	1	22060	\$15.30
Replacement Blades of M-2 Steel	10	22065	41.85
Replacement Blades of M-42 Steel For Use On Stainless Steel	10	22067	55.95

Royal Roto-Drive Set



- ❑ Roto-Drive — the quickest way to chamfer by hand.
- ❑ Single-flute countersink provides a smoother cut than multiple-flute countersinks.
- ❑ Very little wrist force needs to be applied, reducing the risk of injury.
- ❑ Sold individually or as a complete set.



Chamfer difficult-to-reach holes.



Chamfer small holes next to shoulder.

DESCRIPTION	PACKAGE OF	PART NUMBER	PRICE
Roto-Drive w/Plastic Handle and $\frac{1}{8}$ " Countersink	1	22506	\$11.70
Roto-Drive w/Plastic Handle and $\frac{1}{4}$ " Countersink	1	22508	19.45
Roto-Drive w/Plastic Handle and $\frac{5}{16}$ " Countersink	1	22510	19.75
Roto-Drive w/Plastic Handle and $\frac{3}{8}$ " Countersink	1	22512	20.65
$\frac{1}{8}$ " Countersink Only	1	22520	5.85
$\frac{1}{4}$ " Countersink Only	1	22530	13.90
$\frac{5}{16}$ " Countersink Only	1	22540	14.10
$\frac{3}{8}$ " Countersink Only	1	22550	14.95
Plastic Handle Only	1	22570	6.20



MACHINE SHOP ACCESSORIES

CLEVER, TIME-SAVING PRODUCTS
TO MAKE YOUR LIFE EASIER

R8 QUICK-CHANGE TOOLING SYSTEM

Unit only
protrudes
1½" beyond
spindle.



1. Loading the Quick-Change Body into a standard R8 spindle.



2. Loading drill chuck holder and drill into body.



3. Removing drill chuck holder with one hand.



4. Inserting endmill holder and endmill for next operation.

- ❑ The Royal Quick-Change Tool System provides a **fast method for changing tools** on a Bridgeport-style mill — once the R8 body is installed in the machine spindle, tools can be changed in seconds.
- ❑ One hand operation — simply depress the brass locking button and rotate collar to the locked-open position. When a new tool is inserted, it depresses a spring-loaded pin, snapping the collar back into the locked-closed position.
- ❑ Very accurate — total system runout can be less than 0.0005" TIR under the right circumstances.
- ❑ **Short overhang (1½")** and two positive-drive keys enable many common milling and drilling operations to be easily performed.
- ❑ Please note that this tool is designed for light/medium-duty applications where the ability to change tools quickly outweighs the need for extreme rigidity. We do not recommend using this system for heavy milling or high-production applications.

R8 QUICK-CHANGE TOOLING SYSTEM



R8 Quick-Change Body Only

- Only protrudes 1/8" from gage line.

PART NUMBER	PRICE
24100	\$768



Start-Up Milling Kit

Consisting of:

- Quick-Change Body
- One 3/8" Endmill Tool Holder
- One 1/2" Endmill Tool Holder
- One 5/8" Endmill Tool Holder
- One Stand FREE

PART NUMBER	PRICE
24330	\$1,485



Start-Up Drill & Mill Kit

Consisting of:

- Quick-Change Body
- Three Drill Chuck Tool Holders (specify tapers)
- One 3/8" Endmill Tool Holder
- One 1/2" Endmill Tool Holder
- One 5/8" Endmill Tool Holder
- One Stand FREE

PART NUMBER	PRICE
24335	\$2,087



Endmill Tool Holder*

BORE SIZE	D	L	PART NUMBER	PRICE
1/8"	1/2"	1 3/8"	24200	\$239
3/16"	1 1/16"	1 3/8"	24205	239
1/4"	1 1/16"	1 3/8"	24210	239
3/8"	1 3/16"	1 3/8"	24215	239
1/2"	1 3/8"	1 3/8"	24220	239
5/8"	1 9/16"	1 5/8"	24225**	239
3/4"	1 13/16"	2 3/16"	24230**	254
1"	2"	2 15/16"	24235**	282

*Single endmills only. Designed for minimum overhang.

**For light milling only. For heavy milling use solid endmill holder.



Collet Chuck Tool Holder

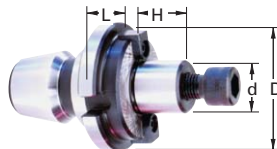
FOR ERICKSON™ COLLET MODEL	MAX. COLLET CAPACITY	A	PART NUMBER	PRICE
200 DA	3/8"	1 9/16"	24260	\$343
180 DA	3/4"	1 13/16"	24265	361
ER -16*	3/8"	1 9/16"	24266	352
ER - 32*	3/4"	1 15/16"	24268	378

* Collets available on pages 34 – 38.



Drill Chuck Tool Holder

JACOBS TAPER	L	PART NUMBER	PRICE
J2	1 3/32"	24285	\$202
J3	1 3/32"	24290	202
J6	1 3/32"	24295	202
J33	1 3/32"	24300	202



Shell Mill Tool Holder

"d" SIZE	D	L	H	PART NUMBER	PRICE
1/2"	1 1/4"	9/16"	1 9/32"	24250	\$313
3/4"	1 11/16"	9/16"	2 3/32"	24255	343



Tool Holder Stand

PART NUMBER	PRICE
24325	\$92

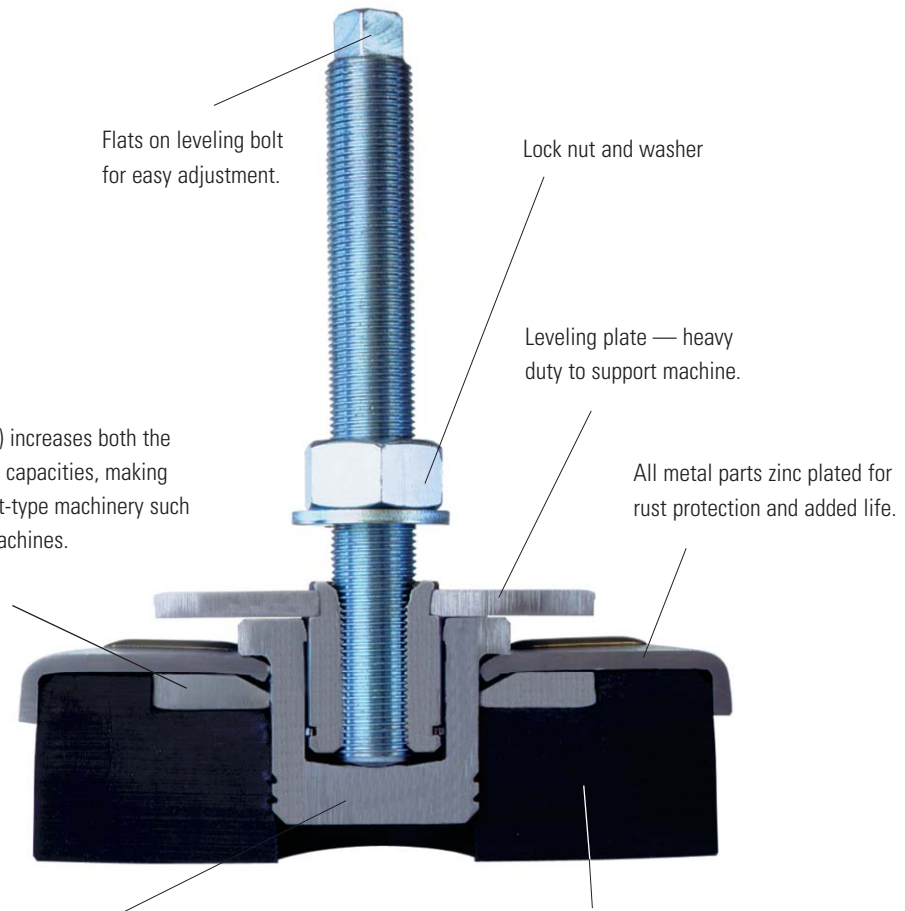
MACHINE MOUNTS



Royal Machine Mounts are Built Tough to Level and Last!

Shock plate (models #4 and #5 only) increases both the vertical and horizontal load carrying capacities, making these an excellent choice for impact-type machinery such as presses and injection molding machines.

- ❑ Royal machine mounts are built tough to level and last. All metal parts are zinc plated for rust protection and long life.
- ❑ Royal machine mounts simplify machine installation, reduce noise, and isolate vibration.
- ❑ Great for injection molding machines, presses, lathes, mills, and grinders.
- ❑ These mounts **meet OSHA requirements** by preventing machines from “walking” without the need for bolting or cementing.
- ❑ All Royal machine mounts incorporate a large, chloroprene rubber base that is resistant to oil, water, and many chemicals.
- ❑ Support cup is machined from a solid bar instead of deep drawn, resulting in increased thickness for strength and rigidity.
- ❑ Unique internal retaining clip ensures that mounts will stay together if machine is moved to a new location.
- ❑ Royal machine mounts **protect sensitive machine components**, improve performance, and reduce maintenance costs.



Heavy-duty support cup is machined from a solid steel bar for strength. Other brands rely on a thin drawn cup which often fails by fatigue. Note the increased thickness of the lip and bottom sections.

Thick chloroprene base is resistant to most chemicals.

Important – Before installing mounts on any machine, make sure they are approved for use by the machine manufacturer.

Choosing the Correct Royal Machine Mounts

1. Calculate the load on each mount by dividing the total weight of the machine by the number of mounting locations.

Note: sometimes it may be necessary to compensate for machines that do not have an evenly distributed load.

2. Find the category in the specification chart which corresponds to the type of machine being installed.

3. Match up the correct mount with the machine.

Example: Suppose you wish to mount an 18,000-lb. CNC lathe which has six mounting locations.

$$18,000 / 6 = 3,000 \text{ lbs. per mount}$$

From the chart on the next page we see that this machine falls into the range of the #3 mount for non-impact machinery.

Warning: Always use the correct mount for each machine. These mounts are not designed for machines that must be bolted to the floor to prevent tipping. If you have any questions, please contact one of our application engineers at 1-800-645-4174.

Royal Machine Mounts

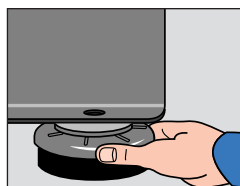
		#1	#2	#3	#4	#5
Load Range per Mount (lbs.)	General Non-Impact Machinery	100–1,100	880–2,200	1,760–5,500	3,300–8,800	6,600–12,000
	Injection Molding Machines	390 max.	790 max.	2,180 max.	5,450 max.	8,220 max.
	up to 125 strokes / min	150–440	440–880	880–3,080	3,080–5,940	5,940–8,800
	Presses up to 180 strokes / min	130–300	300–770	770–2,420	2,420–4,290	4,290–7,700
	up to 200 strokes / min	110–260	260–550	550–1,760	1,760–2,860	2,860–5,280
Mount Dimensions	Base Diameter	3.16	4.75	6.31	6.31	7.88
	Leveling Plate Diameter	2.38	3.12	3.93	3.93	3.93
	Height to Top of Leveling Plate	1.63	1.94	2.31	2.31	2.72
	Height to Top of Bolt	5.25	5.25	7.50	7.50	7.88
	Leveling Bolt Size	M12 x 1.25	M16 x 1.5	M20 x 1.5	M20 x 1.5	M20 x 1.5
	Standard Leveling Bolt	4.72	4.72	6.88	6.88	6.88
	Level Adjustment	0.88	0.88	1.00	1.00	1.00
Ordering Info	Part Number	27001	27002	27003	27004	27005
	Price Each	\$35	\$67	\$96	\$114	\$186

Extra-Long Leveling Bolts

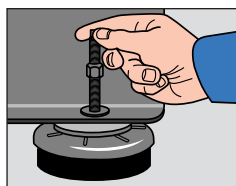
For machines with thick bases.

MOUNT TYPE	BOLT SIZE	BOLT LENGTH	PART NUMBER	PRICE
#1	M12 x 1.25	8 1/4"	27007	\$14
#2	M16 x 1.5	8 1/4"	27008	18
#3–#5	M20 x 1.5	9 3/4"	27009	28

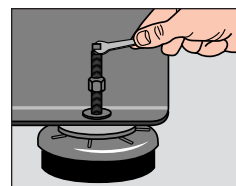
**Easy Installation —
No drilling or bolting
to floor required**



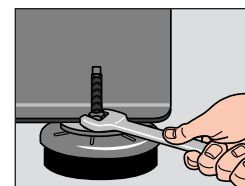
Raise machine and slide mount into place.



Insert leveling bolt through machine base hole and thread into mount. Lower machine onto leveling plate.



Raise or lower machine by turning leveling bolt.



When machine is level, secure in place with washer and lock nut.

PNEUVAC PUMP

ROYAL
PRODUCTS
Optimize everything.

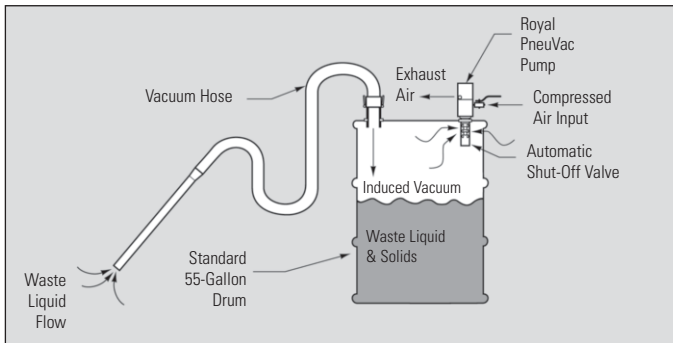
The Royal PneuVac pump is a simple device that uses a compressed air-powered venturi to create a vacuum. All you have to do to operate the unit is: attach the pump and hose to a standard 55-gallon drum, hook up your compressed air supply to the pump, insert the free end of the suction hose into the sump or storage tank, and open the air valve. The coolant and sludge is drawn through the hose and deposited into the drum — quick, clean, and hassle free!



Clean Your Coolant Sumps in Less Than Two Minutes



The Royal PneuVac pump filled this 55-gallon drum with coolant in less than two minutes.



Heavy Duty Construction — Entire pump (except ball valve, float and O-ring) is made from either stainless steel or aluminum. Other brands are made from rust-prone carbon steels and light-duty plastics.

Very Safe — The PneuVac pump is powered by compressed air. This eliminates the possibility of electric shocks often associated with motor-driven pumps. An automatic shut-off valve activates when the drum is full.

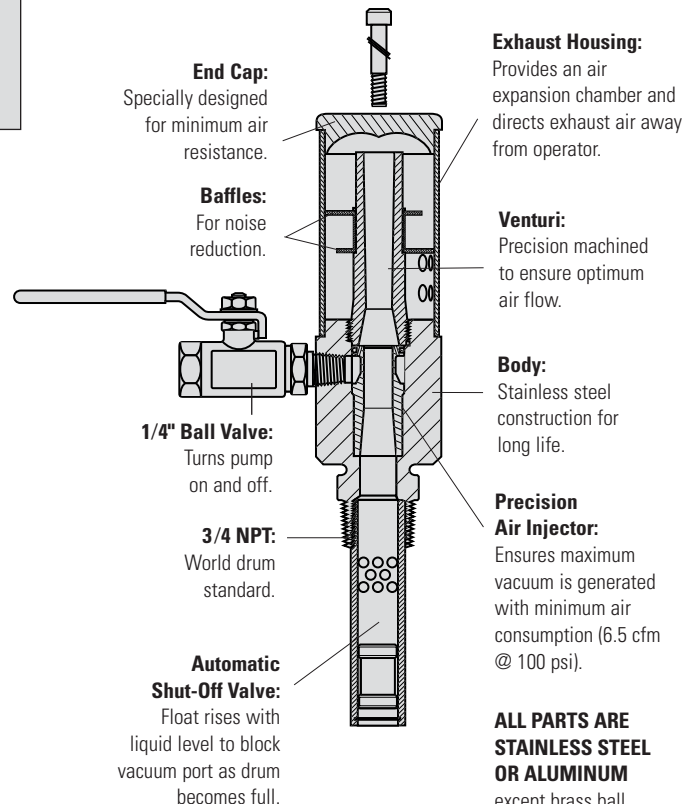
Fast — The Royal PneuVac pump can fill a 55-gallon drum in just 90 seconds. Conventional electric pumps can take up to one hour to move the same amount of liquid.

Thorough — This pump not only removes liquid but will also pick up sludge, metal chips and other debris which often clog or wear out impeller-type pumps.

Quiet — Unique baffle system limits noise level without compromising performance.

Low Maintenance — The PneuVac pump requires very little maintenance because only compressed air flows through the pump body itself.

Great Warranty — Royal Products provides a 3-year warranty against failure of this product due to manufacturing defects.



ALL PARTS ARE STAINLESS STEEL OR ALUMINUM except brass ball valve, Delrin float and Buna-N O-ring.

PNEUVAC PUMP



Royal PneuVac Pump Kit

Consists of pump, 1/4" ball valve, automatic shut-off valve, 10 ft. of smooth-bore hose, quick-disconnect drum fittings, and one 18" aluminum wand.

DESCRIPTION	PART NUMBER	PRICE
Stainless Steel Pump Kit	48010	\$720
Aluminum Pump Kit	48017	610
10ft. Smooth Bore Replacement Hose w/Cuff (1½" Dia.)	48019	64

CAUTION:

1. Do not use the PneuVac pump with flammable or volatile liquids such as gasoline, alcohol, kerosene, aviation fuel, mineral spirits or any similar liquid with a low flash point.
2. Do not modify this product to pressurize drum to pump liquids out. Pressurizing drum could cause an explosion that might result in a serious injury.

PNEUVAC AIR GUNS

- ❑ The Royal PneuVac gun makes shop blow-off and cleanup tasks a breeze.
- ❑ Unique design enables unit to act as both a blow gun and a vacuum.
- ❑ The deep hole gun is a modified version of the PneuVac gun, designed for removing chips from blind holes. The thin black tube blasts high pressure air to dislodge chips while the main nozzle draws them safely away. A clear plastic shroud protects the operator from flying debris.
- ❑ High-output venturi design multiplies air flow. For example, an input air supply of 10 cfm results in an output of approximately 100 cfm.
- ❑ Changing between **blow and vacuum modes** is accomplished by simply reversing the direction of the venturi.
- ❑ New trigger design reduces strain.
- ❑ High vacuum production with minimal air consumption.
- ❑ Made of rugged, anti-static nylon.

Standard PneuVac Gun



PneuVac Deep Hole Gun



DESCRIPTION	PART NUMBER	PRICE
PneuVac Gun Only	49005	\$92
Dust Bag (PneuVac Gun, Dust Bag, Extension Tube and Clamp)	49085	125
Hose Kit (PneuVac Gun, 10ft. Smooth-Bore Hose, Extension Tube, and Clamp)	49080	139
Accessory Kit (Two Extension Tubes, Crevice Tool, Vacuum Head, Vacuum Head Brush, and Round Brush)	49095	28
Deep Hole Gun Only	49010	127
Dust Bag and Clamp Only	49020	35
10ft. Smooth Bore Hose Only (1¼" Dia.)	49090	47

Caution: Always wear safety glasses when operating these tools. Never operate in the vacuum mode unless a hose or dust bag is attached to the exhaust end of the unit.

CHUCK STOP



- ❑ The Royal Chuck Stop provides a simple, consistent method for **locating short parts** in a 3-jaw lathe chuck.
- ❑ Captive, web-shaped design eliminates the danger of using spacers or parallels that could come loose and be thrown from a spinning chuck. Three strong magnets further secure the stop to the chuck face.
- ❑ Stop allows short parts to project past the chuck jaws, providing **clearance for facing operations**.
- ❑ Setup time is greatly reduced — no need to bore soft jaws.
- ❑ The Royal Chuck Stop is very accurate — front and back locating surfaces are parallel within +/- 0.0004".
- ❑ Accommodates chuck jaws up to 55mm (2 1/8") wide.
- ❑ Anodized finish provides good wear-resistance.



Royal Chuck Stop Sets

DESCRIPTION	PART NUMBER	PRICE
Standard Set — includes 15, 20, & 25mm stops	25200	\$268
Deluxe Set — includes 15, 20, 25, 30, & 35mm stops	25210	466

SENSITIVE DRILL FEED

Simple to Use:

1. Grasp free-turning knurled ring and feed with gentle finger pressure.
2. Drill feed is spring-loaded and retracts automatically when ring is released.



Royal Sensitive Drill Feed

SHANK DIA.	CHUCK MOUNT TAPER	PART NUMBER	PRICE
1/2"	Jacobs #0 (DIN B6)	25300	\$75

Price does not include drill chuck pictured.

"MAGIC/GRIP" VISE LINERS



- ❑ Provide sure **gripping without damaging** finished parts.
- ❑ Easily adaptable to all vises.
- ❑ "Magic/Grip" has a memory — takes up to 14,000 psi pressure and still returns to original shape after use.
- ❑ Easily bendable by hand.
- ❑ Can be used as a vibration isolator.
- ❑ Can be used when hammering sheet metal to protect the surface — especially painted metal.
- ❑ Holds odd-shaped parts without damaging them.

SIZE	PART NUMBER	PRICE
12" x 4"	26010	\$56
6" x 4"	26011	36



ALBRECHT PRECISION DRILL CHUCKS

ALBRECHT

The World's Most Consistently Accurate Drill Chucks

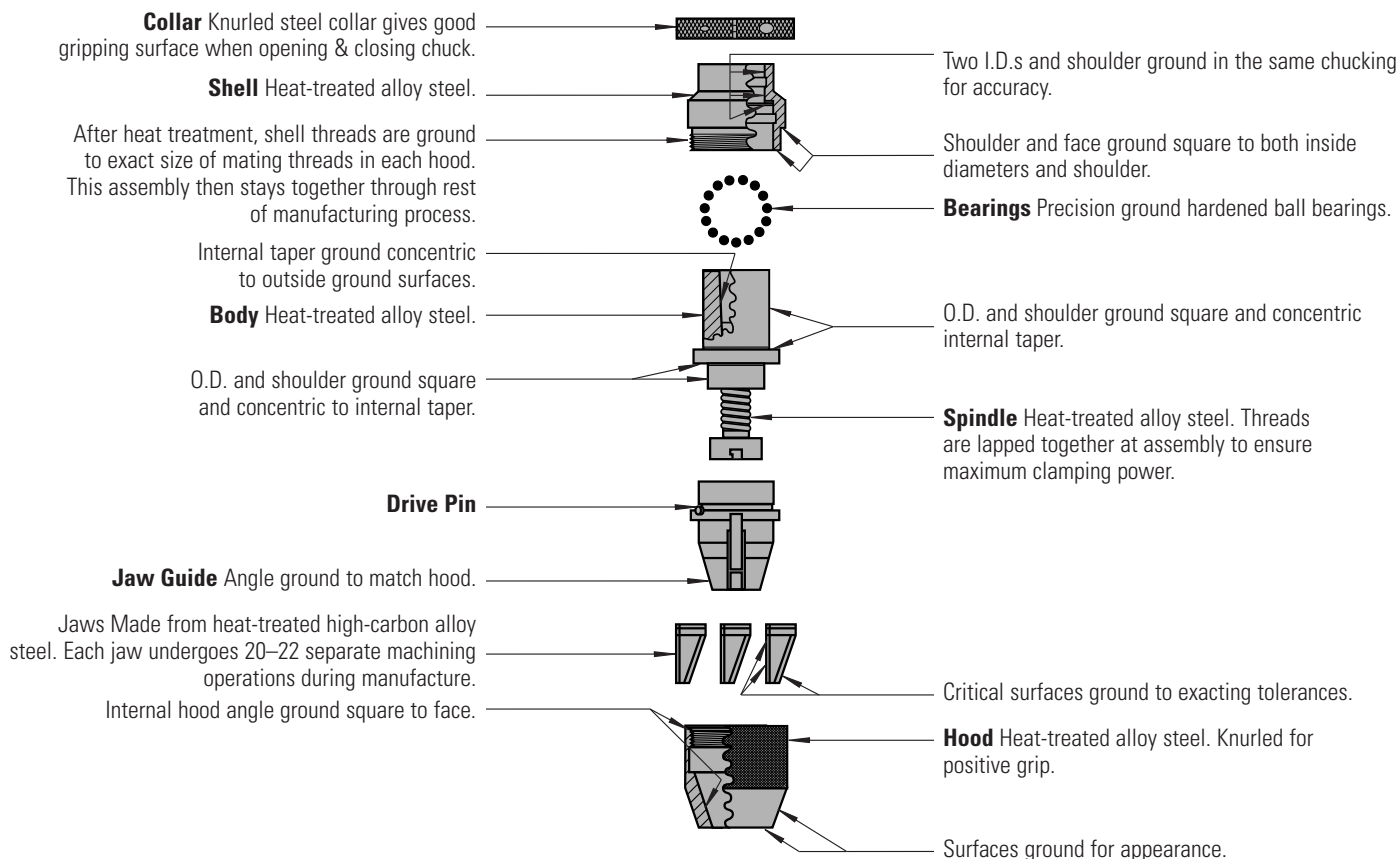


For the past 100 years, Albrecht's line of precision drill chucks has consistently earned the highest praise for **outstanding quality and accuracy**.

At the Albrecht factory, located outside of Stuttgart, Germany, in-process air gages and custom test fixtures are used to inspect all components throughout each step of the manufacturing process. Upon assembly, each chuck is qualified with 4–6 different diameter test pins at two distinct locations on each pin, and then a quality control inspector repeats the process with 4–6 different pins before approving the chuck for packaging.

Drill chuck accuracy is critical to producing accurate hole sizing and promoting longer drill life. In today's competitive environment of short lead times and slim margins, a few scrapped parts can quickly kill a job's profits. Can you afford to take a chance on anything less than an Albrecht?

WHAT DOES IT TAKE TO MAKE A CLASSIC?



SELF-TIGHTENING DESIGN



The more torque that is applied to the chuck, the tighter it grips!

All Albrecht Precision Drill Chucks, except for the Key-Lock models, incorporate a unique self-tightening feature that causes them to **grip drills tighter** as more torque is applied.

This self-tightening advantage, combined with the fact that keyless chucks are easily opened by hand, is causing many industries to abandon key-type drill chucks altogether.

DIAMOND-IMPREGNATED JAWS



**FOR CARBIDE
AND HARDENED-
SHANK DRILLS**

Albrecht's patented diamond-impregnated jaws eliminate the problems of drill slippage and jaw damage that often occur when using carbide or hardened-shank drills.

Because the diamond particles embedded in the jaws are harder than the drill shanks they are gripping, they are **able to penetrate for a deep, no-slip bite**.

U.S. patent number 5,340,128

CNC DRILL CHUCKS Excellent for CNC Machining Centers

Royal offers two Albrecht drill chuck models designed specifically for CNC machining centers:



KEY-LOCK



WRENCH-LOCK

CNC Drill Chuck Advantages

Although some manufacturers use collet chucks or toolholders for holding drills, often an Albrecht CNC Drill Chuck would be a better choice.

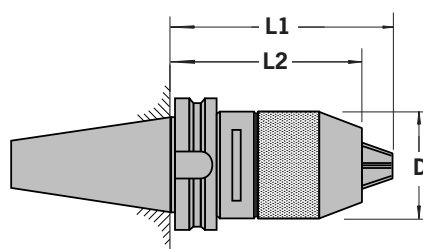
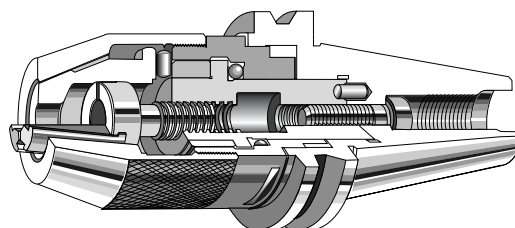
- A drill chuck can hold any size drill shank within its range. This is important because many tap drills have odd-sized shanks that are not compatible with conventional toolholders and collets.
- As the jaws of a drill chuck close, they always remain parallel to centerline. This results in **uniform gripping force and maximum accuracy**, regardless of the drill shank diameter.

For Best Performance, Equip Your Machining Centers with Albrecht CNC Drill Chucks from Royal

ALBRECHT WRENCH-LOCK CNC DRILL CHUCKS



- ❑ Internal construction is very similar to Albrecht Classic Drill Chucks.
- ❑ Integral CAT and BT shanks make these chucks **shorter and more rigid** than a chuck/arbor combination, resulting in:
 - Greater accuracy
 - Greater rigidity
 - Larger work envelope
- ❑ Integral shank eliminates the possibility of a chuck slipping on its arbor.
- ❑ Chuck can be easily tightened and opened by hand.
- ❑ Extra tightening force can be achieved by using a spanner wrench (included), although this chuck also incorporates the same self-tightening feature as the Classic models (See Page 115).



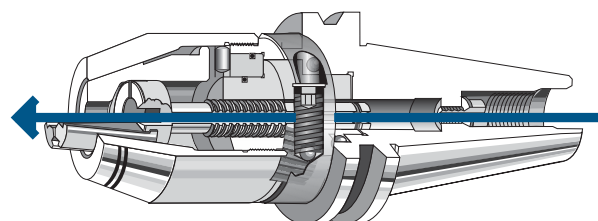
Albrecht Wrench-Lock CNC Drill Chucks

CHUCK MODEL	CAPACITY		SHANK TYPE	D	L1	L2	THREAD	MAXIMUM RPM	WEIGHT (lbs.)	PART NUMBER	PRICE
	(inches)	(millimeters)									
WL130-CAT40	1/32 - 1/2	1-13	CAT 40	2"	3 15/16"	4 7/16"	5/8-1	6,500	4.6	77100	\$541
WL160-CAT40	1/16 - 5/8	1.5-16	CAT 40	2 1/4"	4 1/32"	4 5/8"	5/8-11	6,500	5.1	77110	610
WL160-CAT50	1/16 - 5/8	1.5-16	CAT 50	2 1/4"	4 1/32"	4 5/8"	1-8	6,500	6.2	77120	710
WL130-BT40	1/32 - 1/2	1-13	BT40	2"	3 5/8"	4 3/32"	M16	6,500	4.2	77160	541

ALBRECHT KEY-LOCK CNC DRILL CHUCKS

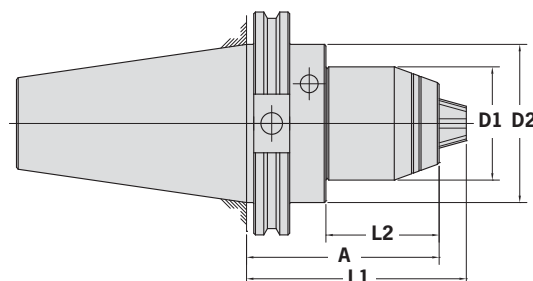
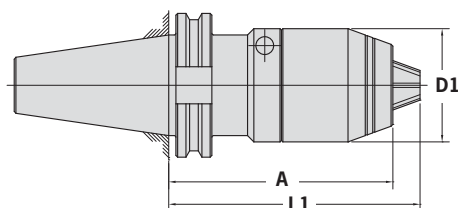


Thru-coolant feature
is standard on all
Key-Lock chucks.



- New, compact design provides **increased capacity and better clearance.**
- Extremely accurate – Albrecht Key-Lock Drill Chucks are the most accurate drill chucks available.
- Unique worm/gear arrangement is similar to the Überchuck and transmits extremely high gripping force to the jaws.
- Short length and integral shank provide **exceptional rigidity.**
- Thru-coolant feature is standard on all Albrecht Key-Lock Drill Chucks.
- Non-rotating hood – chuck is opened and closed via a hex key inserted into the side of the body.
- Balanced for use on all CNC machines up to 7000 rpm (75408 balanced to 18,000 rpm).
- Can be operated in both clockwise and counterclockwise directions.

The key-operated worm and gear assembly generates **very high grip force** and ensures that the chuck can't loosen during operation because a worm can drive a gear, but a gear cannot drive a worm.



Albrecht Key-Lock CNC Drill Chucks

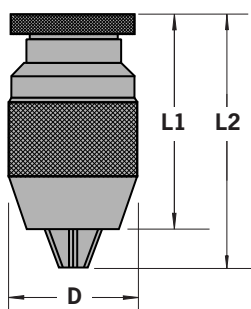
CHUCK MODEL	CAPACITY		TAPER	A	L1	L2	D1	D2	PART NUMBER	PRICE
	(inches)	(millimeters)								
KL100-CAT40	1/64 – 3/8	0.5 – 10	CAT 40	2.72	3.39	1.48	1.50	1.75	75402	\$616
KL160-HSK 63 Form A	1/32 – 5/8	1 – 16	HSK 63 Form A	3.86	4.33	–	1.97	–	75403	624
KL160-HSK 63 Form F	1/32 – 5/8	1 – 16	HSK 63 Form F	3.86	4.33	–	1.97	–	75408	751
KL160-CAT40	1/32 – 5/8	1 – 16	CAT 40	3.90	4.37	–	1.97	–	75404	564
KL160-CAT50	1/32 – 5/8	1 – 16	CAT 50	3.31	3.78	1.93	1.97	2.76	75406	758

Note – Other tapers available. Please contact Royal at 1-800-645-4174.



The World's Most Consistently Accurate Drill Chucks

- ❑ Available in the following styles:
 - Standard
 - Thru-hole
 - Diamond-coated jaws
- ❑ Keyless operation.
- ❑ Self-tightening design (See Page 115).
- ❑ Balanced.
- ❑ Thru-hole models are great for EDM applications and also allow the use of longer drills.
- ❑ Models with diamond-coated jaws **effectively grip carbide-shank drills** (See Page 115).
- ❑ Threaded-mount models available upon request.



Albrecht Classic Keyless Drill Chuck Specifications

CHUCK MODEL	CAPACITY		DIMENSIONS			MAXIMUM RPM	WEIGHT (lbs.)
	(inches)	(millimeters)	D	L1	L2		
15	0* - 1/16	0* - 1.5	0.75	1.38	1.50	50,000	0.1
30	0* - 1/8	0* - 3	1.00	1.75	1.88	35,000	0.2
65	0* - 1/4	0* - 6.5	1.38	2.44	2.69	20,000	0.7
100	0* - 3/8	0* - 10	1.69	3.13	3.63	12,000	1.4
130	1/32 - 1/2	1 - 13	2.00	3.56	4.06	7,000	2.1
160	1/8 - 5/8	3 - 16	2.25	3.75	4.31	4,000	2.8

* The inherent design characteristics of a keyless drill chuck may prevent the jaws from closing down to absolute zero. Albrecht guarantees a minimum gripping diameter of 0.008" for Model 15 Classic Drill Chucks, and 0.015" for Models 30-100 Classic Drill Chucks. If you need to grip a smaller diameter, please contact us at 1-800-645-4174.

Albrecht Classic Keyless Drill Chucks – All Models

CHUCK MODEL	CAPACITY		CHUCK MOUNT	CLASSIC KEYLESS DRILL CHUCK No Thru Hole		CLASSIC KEYLESS DRILL CHUCK with Thru Hole		CLASSIC KEYLESS DRILL CHUCK with Diamond Jaws	
	(inches)	(millimeters)		PART NUMBER	PRICE	PART NUMBER	PRICE	PART NUMBER	PRICE
15-J0	0* - 1/16	0* - 1.5	J0	70010	\$444	73500	\$448	-	-
30-J0	0* - 1/8	0* - 3	J0	70020	334	73510	325	-	-
30-J1	0* - 1/8	0* - 3	J1	70030	334	73520	325	-	-
65-J1	0* - 1/4	0* - 6.5	J1	70050	320	-	-	-	-
100-J33	0* - 3/8	0* - 10	J33	70070	347	-	-	-	-
100-J2	0* - 3/8	0* - 10	J2	70080	347	-	-	-	-
130-J33	1/32 - 1/2	1 - 13	J33	70090	379	-	-	70290	554
130-J2	1/32 - 1/2	1 - 13	J2	70100	379	-	-	-	-
130-J6	1/32 - 1/2	1 - 13	J6	70110	379	-	-	70300	554
160-J6	1/8 - 5/8	3 - 16	J6	70120	428	-	-	-	-

ALBRECHT CLASSIC-PLUS DRILL CHUCKS WITH INTEGRAL SHANK

- Integral shank design is more compact than a combined drill chuck and arbor, resulting in:

- Greater accuracy
- Greater rigidity
- Larger work envelope

- Integral shank eliminates the possibility of a chuck slipping on its arbor.

- This unit is often **less expensive than a separate chuck and arbor.**

- Keyless operation.

- Self-tightening design (See Page 115).

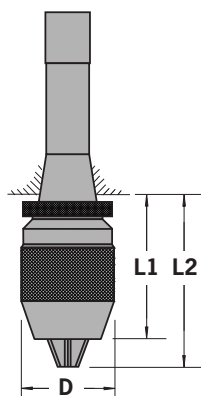
- Balanced.

- Available with standard or diamond-coated jaws (See Page 115).

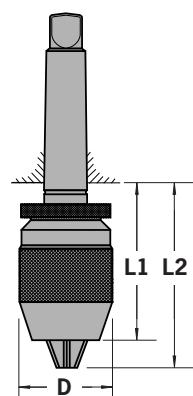
Dimensions

CHUCK MODEL	D	L1	L2
130-2MT	2"	3 ³ / ₈ "	3 ⁷ / ₈ "
130-3MT	2"	3 ³ / ₈ "	3 ⁷ / ₈ "
130-4MT	2"	3 ⁷ / ₁₆ "	3 ¹⁵ / ₁₆ "
130-R8	2"	3 ⁵ / ₁₆ "	3 ¹³ / ₁₆ "
130-5/8	2"	3 ¹ / ₈ "	3 ⁵ / ₈ "

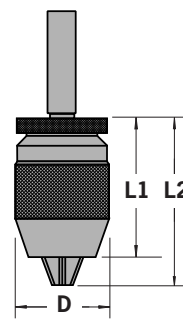
CHUCK MODEL	D	L1	L2
160-2MT	2 ¹ / ₄ "	3 ¹ / ₂ "	4 ¹ / ₁₆ "
160-3MT	2 ¹ / ₄ "	3 ¹ / ₂ "	4 ¹ / ₁₆ "
160-4MT	2 ¹ / ₄ "	3 ⁹ / ₁₆ "	4 ¹ / ₁₆ "
160-R8	2 ¹ / ₄ "	3 ⁷ / ₁₆ "	3 ¹⁵ / ₁₆ "



R8 SHANK



MORSE TAPER SHANK



STRAIGHT SHANK



Albrecht Classic-Plus Keyless Drill Chucks with Integral Shank

CHUCK MODEL	CAPACITY		SHANK TYPE	MAXIMUM RPM	WEIGHT (lbs.)	PART NUMBER	PRICE
	(inches)	(millimeters)					
CP130-2MT	1/32 - 1/2	1 - 13	2MT	7,000	2.3	73010	\$421
CP130-3MT	1/32 - 1/2	1 - 13	3MT	7,000	2.6	73020	423
CP130-4MT	1/32 - 1/2	1 - 13	4MT	7,000	3.3	73030	447
CP130-R8	1/32 - 1/2	1 - 13	R8	7,000	2.6	73040	463
CP130-5/8	1/32 - 1/2	1 - 13	5/8"SS	7,000	2.2	73050	419
CP160-2MT	1/8 - 5/8	3 - 16	2MT	4,000	2.9	73060	467
CP160-3MT	1/8 - 5/8	3 - 16	3MT	4,000	3.3	73070	470
CP160-4MT	1/8 - 5/8	3 - 16	4MT	4,000	4.0	73080	494
CP160-R8	1/8 - 5/8	3 - 16	R8	4,000	4.2	73090	509



**FOR CARBIDE
AND HARDENED-
SHANK DRILLS**

Albrecht Classic-Plus Keyless Drill Chucks with Integral Shank and Diamond-Coated Jaws

CHUCK MODEL	CAPACITY		SHANK TYPE	MAXIMUM RPM	WEIGHT (lbs.)	PART NUMBER	PRICE
	(inches)	(millimeters)					
CPD130-2MT	1/32 - 1/2	1 - 13	2MT	7,000	2.3	73110	\$598
CPD130-3MT	1/32 - 1/2	1 - 13	3MT	7,000	2.6	73120	616
CPD130-4MT	1/32 - 1/2	1 - 13	4MT	7,000	3.3	73130	627
CPD130-R8	1/32 - 1/2	1 - 13	R8	7,000	2.6	73140	643
CPD130-5/8	1/32 - 1/2	1 - 13	5/8"SS	7,000	2.2	73150	597

ALBRECHT STAINLESS STEEL KEYLESS DRILL CHUCKS



- ❑ Albrecht is the world's largest manufacturer of stainless steel keyless drill chucks, **supplying virtually all of the large medical device companies** throughout North America, Europe, and Asia.
- ❑ Albrecht stainless steel drill chucks are specifically designed for surgical applications. Available features include:
 - Models with special hood surface-contouring to maximize grip when wearing gloves, even if wet.
 - A one-piece collar that eliminates crevices where foreign matter can collect.
 - A ratcheting locking mechanism to prevent accidental opening.

Ergon-Grip™



Albrecht developed the Ergon-Grip™ specifically for environments where the user wears surgical gloves. The specially designed hood and collar are optimized to provide maximum grip – even when wet. Eliminating the traditional knurl reduces the risk of gloves tearing and aids in sterilization by eliminating hundreds of tiny bacteria collection points.

Albrecht Stainless Steel Classic Keyless Drill Chucks

CHUCK MODEL	"TYPE"	CAPACITY		CHUCK MOUNT	THRU-HOLE DIAMETER		MAXIMUM RPM	WEIGHT (lbs.)	PART NUMBER	PRICE
		(inches)	(mm)		(inches)	(mm)				
CS30-3/8 Knurled		0* - 1/8	0* - 3	3/8 - 24	3/32	3	7,500	0.3	73700	\$526
CS50-3/8 Knurled		1/32 - 1/4	0.6 - 7.4	3/8 - 24	5/32	4	5,000	0.5	73710	564
CS50-3/8 Ergon-Grip™		1/32 - 1/4	0.6 - 7.4	3/8 - 24	5/32	4	5,000	0.5	73720	593

Please note – the chucks featured in the chart are just a sample of what we can offer. Please contact one of our applications engineers at 1-800-645-4174 to discuss your specific needs.

ALBRECHT ARBORS

- ❑ Manufactured from high-grade alloy steels.
- ❑ Hardened for long life.
- ❑ Ground concentric within 0.0001".
- ❑ Guarantee: If an Albrecht chuck ever slips on an Albrecht arbor, we **will repair or replace them at no charge.**



Straight Shank

SHANK DIAMETER	SHANK LENGTH	CHUCK TAPER	PART NUMBER	PRICE
3/8"	2 1/2"	J0	70580	\$45
3/8"	2 1/2"	J1	70583	47
1/2"	2 1/2"	J0	70586	45
1/2"	2 1/2"	J1	70589	47
1/2"	2 1/2"	J2	70592	57
1/2"	2 1/2"	J33	70595	73
1/2"	2 1/2"	J6	70598	79
5/8"	2 1/2"	J1	70601	48
5/8"	2 1/2"	J33	70607	73
5/8"	2 1/2"	J6	70610	79
3/4"	3"	J2	70616	60
3/4"	3"	J6	70619	81
1"	3"	J33	70625	77



R8 Taper

CHUCK MOUNT	PART NUMBER	PRICE
J1	70650	\$84
J2	70653	84
J6	70656	84
J33	70659	84

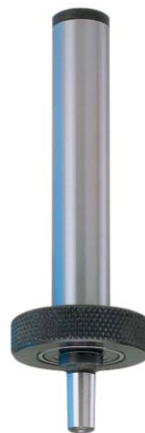
ALBRECHT ACCESSORIES

SENSITIVE DRILL FEEDS

- ❑ Makes drilling of small holes easy by giving operator fingertip feed control independent of coarser quill feed.
- ❑ Eliminates the need for special machines to drill small holes.
- ❑ **Reduces breakage and deflection of small drills.**

Simple to use:

1. Grasp free-turning knurled ring and feed with gentle finger pressure.
2. Spring-loaded. When ring is released, chuck retracts automatically.



Note: Spring is specifically balanced for use with model 15-J0. The use of other chucks could result in decreased accuracy and performance.

SHANK	TAPER	PART NUMBER	PRICE
1 Morse Taper	J0	70670	\$393
1/2" Diameter	J0	70675	359

CHUCK REMOVAL TOOLS

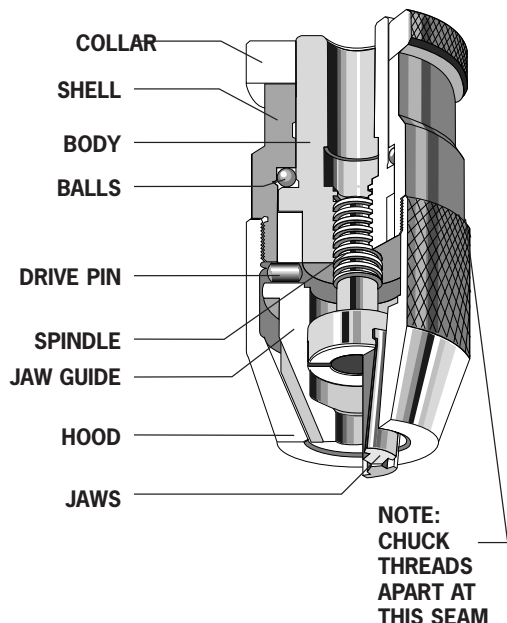
- ❑ Tapered chuck removal tool can be used to remove the chucks from their mounts.
- ❑ Simply match the Jacobs taper on the chuck to the corresponding tool.

CHUCK MOUNT	PART NUMBER	PRICE
J0	70678	\$60
J1	70680	86
J2	70682	92
J33	70682	92
J6	70682	92



ALBRECHT CHUCK REFURBISHING

Send It In or Do It Yourself



Many customers refurbish their own chucks by following these simple instructions. If you have questions regarding the refurbishing process, please call one of our applications engineers at 1-800-645-4174, or visit www.royalprod.com.

- Remove collar from chuck
- There is an invisible seam between the hood and shell. Hold chuck by the shell in a vise with soft jaws and loosen hood with a strap wrench – RH thread
- Once hood has been loosened, unscrew by hand to prevent distortion
- Slide jaws out of jaw guide and remove guide
- Remove body and spindle assembly to expose balls
- Clean all parts with a mild solvent
- Replace worn or damaged parts
- Reverse steps for assembly

Caution – do not lubricate acme thread on body/spindle assembly. Thread must be clean and dry for chuck to work correctly.

If you prefer to send your chucks back to our factory for refurbishing, please send them to the address listed in this catalog. Be sure to include your name, telephone number, and either a fax number or email address so we can send you a free, no-obligation quotation. If our technicians determine that a chuck is beyond reasonable refurbishing condition, you will be offered a brand new Albrecht chuck at a discounted price.

ALBRECHT REPLACEMENT PARTS

Classic Keyless Chucks

CHUCK MODEL	BODY & SPINDLE ASSEMBLY		JAWS		HOOD		BALLS (Set)		COLLAR		SHELL		JAW GUIDE		DRIVE PIN	
	PART NUMBER	PRICE	PART NUMBER	PRICE	PART NUMBER	PRICE	PART NUMBER	PRICE	PART NUMBER	PRICE	PART NUMBER	PRICE	PART NUMBER	PRICE	PART NUMBER	PRICE
C15-J0	70796	\$71	70700	\$139	70716	\$45	70732	\$14	70748	\$54	70764	\$55	70780	\$60	71002	\$1
C30-J0	70798	\$7	70702	\$77	70718	\$48	70734	\$9	70750	\$24	70766	\$38	70782	\$57	71004	\$1
C30-J1	70800	\$56	70702	\$77	70718	\$48	70734	\$9	70750	\$24	70766	\$38	70782	\$57	71004	\$1
C50-J1	70802	\$58	70704	\$76	70720	\$49	70736	\$9	70752	\$24	70768	\$40	70784	\$59	71006	\$1
C65-J1	70804	\$64	70706	\$81	70722	\$48	70738	\$9	70754	\$26	70770	\$43	70786	\$63	71008	\$1
C80-J2	70806	\$75	70708	\$81	70724	\$54	70740	\$9	70756	\$26	70772	\$45	70788	\$65	71010	\$1
C100-J33	70808	\$80	70710	\$84	70726	\$61	70742	\$9	70758	\$27	70774	\$48	70790	\$67	71012	\$1
C100-J2	70810	\$80	70710	\$84	70726	\$61	70742	\$9	70758	\$27	70774	\$48	70790	\$67	71012	\$1
C130-J33	70812	\$80	70712	\$85	70728	\$80	70744	\$14	70760	\$27	70776	\$55	70792	\$70	71014	\$1
C130-J2	70814	\$80	70712	\$85	70728	\$80	70744	\$14	70760	\$27	70776	\$55	70792	\$70	71014	\$1
C130-J6	70816	\$80	70712	\$85	70728	\$80	70744	\$14	70760	\$27	70776	\$55	70792	\$70	71014	\$1
C160-J6	70818	\$90	70714	\$93	70730	\$90	70746	\$14	70762	\$30	70778	\$65	70794	\$78	71016	\$1

Classic-Plus Chucks

CHUCK MODEL	BODY & SPINDLE ASSEMBLY		JAWS		HOOD		BALLS (Set)		COLLAR		SHELL		JAW GUIDE		DRIVE PIN	
	PART NUMBER	PRICE	PART NUMBER	PRICE	PART NUMBER	PRICE	PART NUMBER	PRICE	PART NUMBER	PRICE	PART NUMBER	PRICE	PART NUMBER	PRICE	PART NUMBER	PRICE
CP130-2MT	73250	\$121	70712	\$85	70728	\$80	73220	\$14	73210	\$27	73200	\$55	70792	\$70	71014	\$1
CP130-3MT	73260	\$134	70712	\$85	70728	\$80	73220	\$14	73210	\$27	73200	\$55	70792	\$70	71014	\$1
CP130-4MT	73270	\$147	70712	\$85	70728	\$80	73220	\$14	73210	\$27	73200	\$55	70792	\$70	71014	\$1
CP130-5/8	73290	\$109	70712	\$85	70728	\$80	73220	\$14	73210	\$27	73200	\$55	70792	\$70	71014	\$1
CP130-R8	74040	\$155	70712	\$85	70728	\$80	73220	\$14	73210	\$27	73200	\$55	70792	\$70	71014	\$1
CP160-2MT	74044	\$134	70714	\$93	70730	\$90	70747	\$14	70763	\$29	73205	\$65	70794	\$78	71016	\$1
CP160-3MT	74042	\$134	70714	\$93	70730	\$90	70747	\$14	70763	\$29	73205	\$65	70794	\$78	71016	\$1
CP160-4MT	74041	\$149	70714	\$93	70730	\$90	70747	\$14	70763	\$29	73205	\$65	70794	\$78	71016	\$1
CP160-R8	74043	\$167	70714	\$93	70730	\$90	70747	\$14	70763	\$29	73205	\$65	70794	\$78	71016	\$1



ROYAL FILTERMIST MIST COLLECTORS

**LOW-COST, HIGHLY EFFICIENT,
AND MINIMAL MAINTENANCE**

THE WORLD'S LEADING MIST COLLECTOR



For over 30 years, the Royal Filtermist has been effectively collecting mist and smoke generated by all types of metalworking machinery.

There are currently **more than 150,000 units operating in over 40 countries** worldwide, making Filtermist the world leader in metalworking pollution control equipment.

Throughout its history, the Royal Filtermist has undergone continuous design advances. The Filtermist FX represents the ninth generation of Royal Filtermist, and is the result of extensive computer-aided modeling and testing. Based upon the well-established principle of centrifugal impaction, the Filtermist FX incorporates a series of improvements that have resulted in the most advanced and effective system available for the removal of mist and smoke created by metalworking machinery.



**Check out the Royal Filtermist Video
at www.mistcollectors.com**

Contents

Why Control Oil Mist and Smoke in Your Shop?	Page 125
Common Mist Collection Methods	Pages 126–127
How Does the Royal Filtermist Work?	Page 128
FX Series Design Features	Page 129
Why is the Royal Filtermist the Best Choice for the Metalworking Industry?	Page 130
Risk-Free Performance Guarantee	Page 131
Filtermist Performance Accessories	Pages 132–133
Mounting	Pages 134–135
Choosing the Correct Filtermist Unit	Pages 136–137
Efficiency	Page 138
Commonly Asked Filtermist Questions	Page 139
Model FX-300	Pages 140–141
Model FX-575	Pages 142–143
Model FX-900	Pages 144–145
Model FX-1200	Pages 146–147
Filtermist Ultra™	Page 148
Filtermist Maintenance	Page 149
Replacement Parts	Pages 150–151
Filtermist Ordering Sheet	Page 152

WHY CONTROL OIL MIST & SMOKE IN YOUR SHOP?



- ❑ **Reduced Health Risks**
Any form of pollution is potentially dangerous to the lungs, larynx, and skin.
- ❑ **Reduced Accident Risks**
Oil mist creates slippery surfaces which increase accident rates.
- ❑ **Reduced Fire Hazards**
Oil deposits create a serious fire risk by allowing fires to spread quickly.



- ❑ **Coolant Cost Savings**
The Royal Filtermist recycles coolant and returns it to your machine rather than venting it to the atmosphere.
- ❑ **Heating and Cooling Cost Savings**
The Royal Filtermist **returns clean air to the shop** instead of exhausting it outdoors.
- ❑ **Cleaning and Maintenance Cost Savings**
Uncontrolled airborne mist and smoke deposits result in more frequent cleaning of exposed surfaces.



INCREASED PRODUCTIVITY

- ❑ **Thermal Stability**
Filtermist aids in temperature control which can **help machines hold tighter tolerances over long-running jobs and/or during unmanned production.**
- ❑ **Improved Employee Attendance**
A contaminated shop environment often results in higher worker absenteeism and lower morale.
- ❑ **Less Machine Downtime**
Fouled contacts in electronic equipment cause expensive downtime.
- ❑ **Higher Speeds and Feeds**
Machining operations can **run at higher speeds and feeds** without the negative effects of increased mist and smoke production.
- ❑ **Better Lighting**
Haze from mist and smoke and grimy buildup on shop lighting fixtures cause even the most well-lit shops to take on a dingy appearance. Bright, cheerful environments improve employee morale and performance.



- ❑ **Fewer Workmen's Compensation Claims**
The increase in workmen's compensation rates from one large claim can cost more than an air cleaning system for an entire factory.
- ❑ **Government Regulations**
The current OSHA and NIOSH limits on airborne oil mist are 5 mg/cubic meter, and this requirement is expected to become even stricter in the future. The Royal Filtermist exceeds **both the current and new proposed limits.**



- ❑ **Attracting and Keeping Good Employees**
Your employees expect and deserve a workplace that is as hazard-free as you can make it. One customer, when asked why he wanted to control the oil mist and smoke in his plant, responded, "I wouldn't expect my office people to work with smoke pouring out of their computers, and I sure don't expect my shop workers to work on machines with oil mist pouring out of them!"

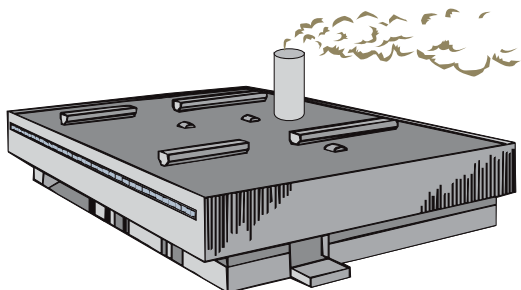
The greatest challenge facing today's manufacturers is attracting and keeping talented employees. Don't risk losing good people to the competition because of poor air quality in your shop. Call Royal today!

COMMON MIST COLLECTION METHODS

In order to fully understand why the Royal Filtermist is the best choice for handling oil mist and smoke produced by the metalworking industry, it is important to have some general knowledge of how other types of collection systems work. This section contains an overview of the most common methods for controlling mist and smoke. While these systems all have some positive features, their drawbacks make them unsuitable for use in most metalworking applications.

External Venting

At one time, the only method for controlling oil mist and smoke in a shop was to vent it out of the building. This was done either by opening the doors and windows or installing a ventilation system. While this method may look like an attractive low-cost solution, the potential dangers should be enough to make any shop owner reconsider this practice.



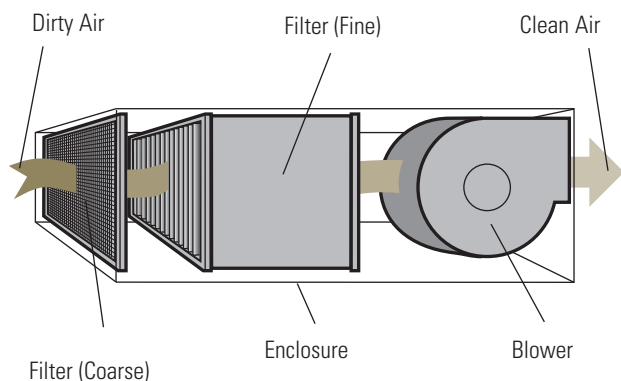
Environmental Hazards Today, it is illegal in many states to exhaust pollutants to the atmosphere. Offending companies run the risk of large fines and lawsuits.

Fire Hazards Over time, oil deposits collect in the ductwork of ventilation systems, making them prime targets for flash fires and providing pathways for fires to spread quickly.

Cleanliness Problems As mist and smoke travels through a shop to the exhaust points, it collects on exposed surfaces. Over time, a grimy buildup occurs on machines, lights, floors, and walls, resulting in dirty, unsafe conditions.

Media-Type Filtration Systems

Media-type filtration systems typically consist of a blower and several filters of varying efficiencies. The contaminated air first passes through a coarse pre-filter where the largest particles are filtered out. It then moves through one or two medium-range filters before reaching the final filter, which is usually made from a high-efficiency HEPA material. Media-type systems are good at collecting dry contaminants such as welding smoke and graphite dust. However, they are often not suitable for metalworking applications where coolant mist is the primary contaminant.



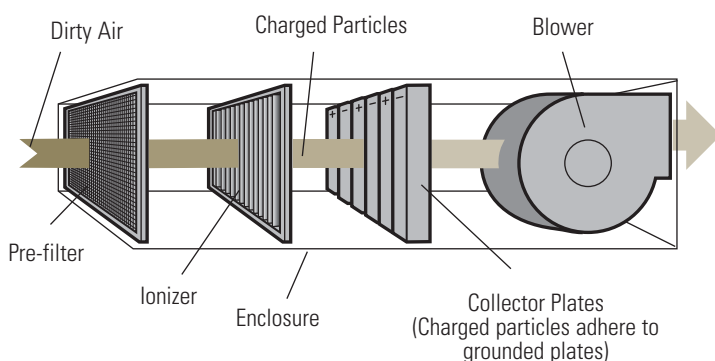
High Operating Costs The biggest drawback of media-type filtration systems is the high operating cost associated with replacement filters. These filters are designed to retain contaminants, so they will become clogged with use. Usually they are made from media that cannot be cleaned, so the only alternative is replacement. Depending upon the cost of the filters and the replacement frequency, this type of system can be quite expensive to operate over the long term.

Decreased Throughput Another problem with multi-stage filter units is that the throughput of the system, measured in cfm, decreases as contaminants become trapped in the pores of the filters. It is important to maintain the correct throughput of any collection system. Reduced throughput means reduced collection, allowing contaminants to escape into the shop air.

Not for Mist Most media filters are designed to collect dry pollutants such as smoke and dust. Exposure to coolant and oil mist may damage certain types of filter media.

Electrostatic Precipitators

Electrostatic precipitators use a blower to draw mist and smoke particles past an ionizer, which imparts a positive charge to them. They then pass across a series of alternately like-charged and grounded collection plates. The particles are repelled by the like-charged plates and forced towards the grounded plates where they collect. The filtered air is returned to the shop.



Variable Efficiency Although electrostatic systems are very efficient when the collection plates are clean, the efficiency drops off drastically as the plates become covered with particles. Each time a particle deposits on a plate, it eliminates a spot for other particles to adhere to.

Maintenance Costs To maintain high efficiency, the collection plates must be cleaned often. This can be expensive because the residue is considered to be hazardous waste and must be disposed of by a certified waste handling company. Many electrostatic systems are sold with costly maintenance contracts, resulting in operating costs that greatly exceed the original unit purchase price.

Health Hazards As the collection plates become full, a phenomenon known as arcing can occur. This arcing results in the **production of ozone**, which has been found to cause a variety of health problems. This potential danger (and the fear of lawsuits) has caused many U.S. companies to remove electrostatic units from their factories.

The Dangers of Ozone

Ozone produced by electrostatic precipitators presents a significant health risk to humans. Here's what OSHA and the EPA have to say about ozone on their websites:

OSHA

Ozone is highly injurious and potentially lethal to experimental animals at concentrations as low as a few parts per million (ppm). A study in which young mice were exposed to 1 ppm ozone for 1 or 2 days reported damage to alveolar tissue. Human populations chronically exposed to lower concentrations of ozone were observed to have adverse changes in lung function. Human volunteers exposed to 0.5 ppm ozone for 3 hours per day, 6 days per week, for 12 weeks showed significant adverse changes in lung function. Another report showed a 20 percent reduction in timed vital lung capacity in persons exposed to average concentrations of ozone of 1.5 ppm for 2 hours.

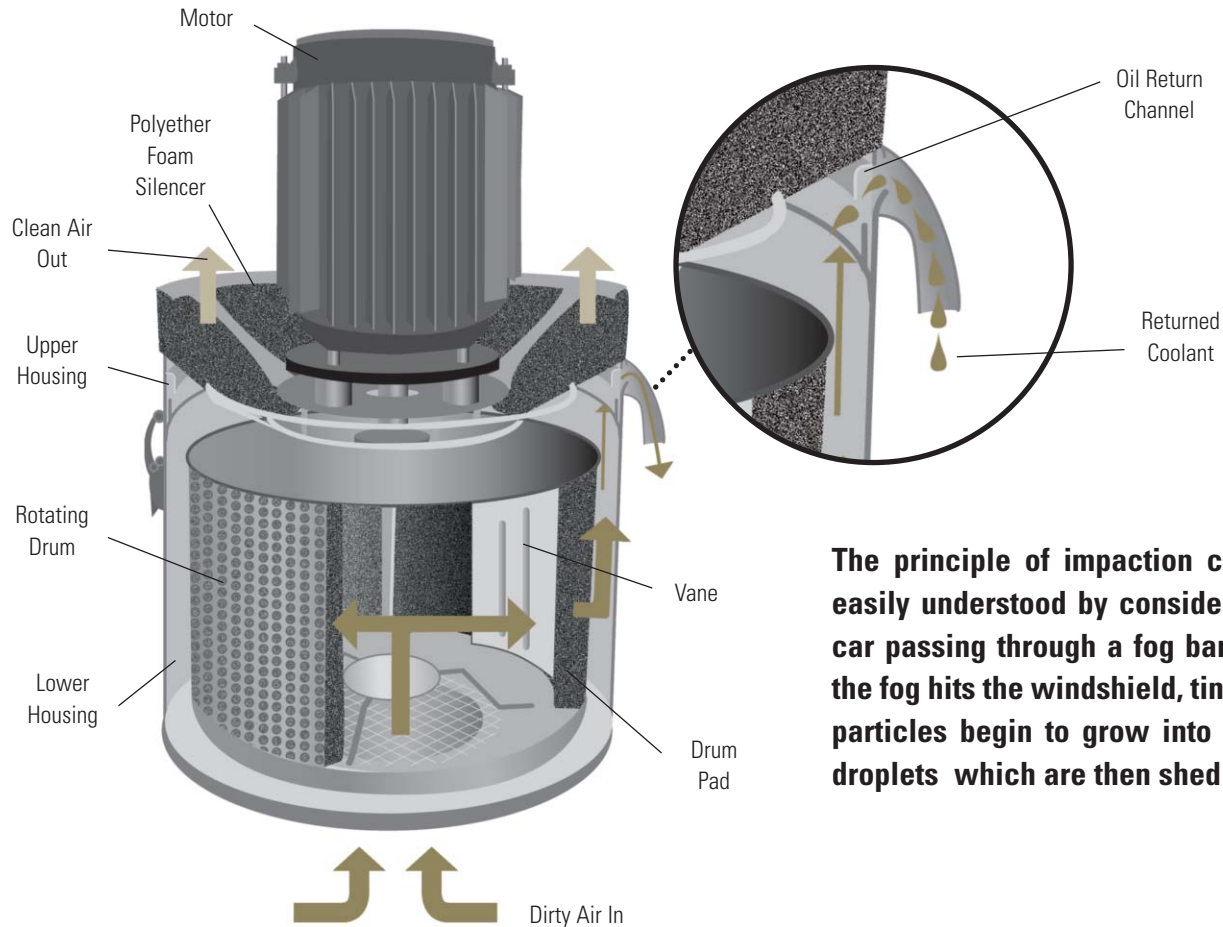
<http://www.osha.gov/dts/sltc/methods/inorganic/id214/id214.html>

EPA

Breathing ozone can trigger a variety of health problems including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. "Bad" ozone also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. <http://www.epa.gov/oar/oaqps/gooduphigh/>

With these health (and potential lawsuit) risks, many companies have established policies that ban the use of electrostatic mist collectors in their facilities.

HOW DOES THE ROYAL FILTERMIST WORK?



The principle of impaction can be easily understood by considering a car passing through a fog bank. As the fog hits the windshield, tiny mist particles begin to grow into water droplets which are then shed off.

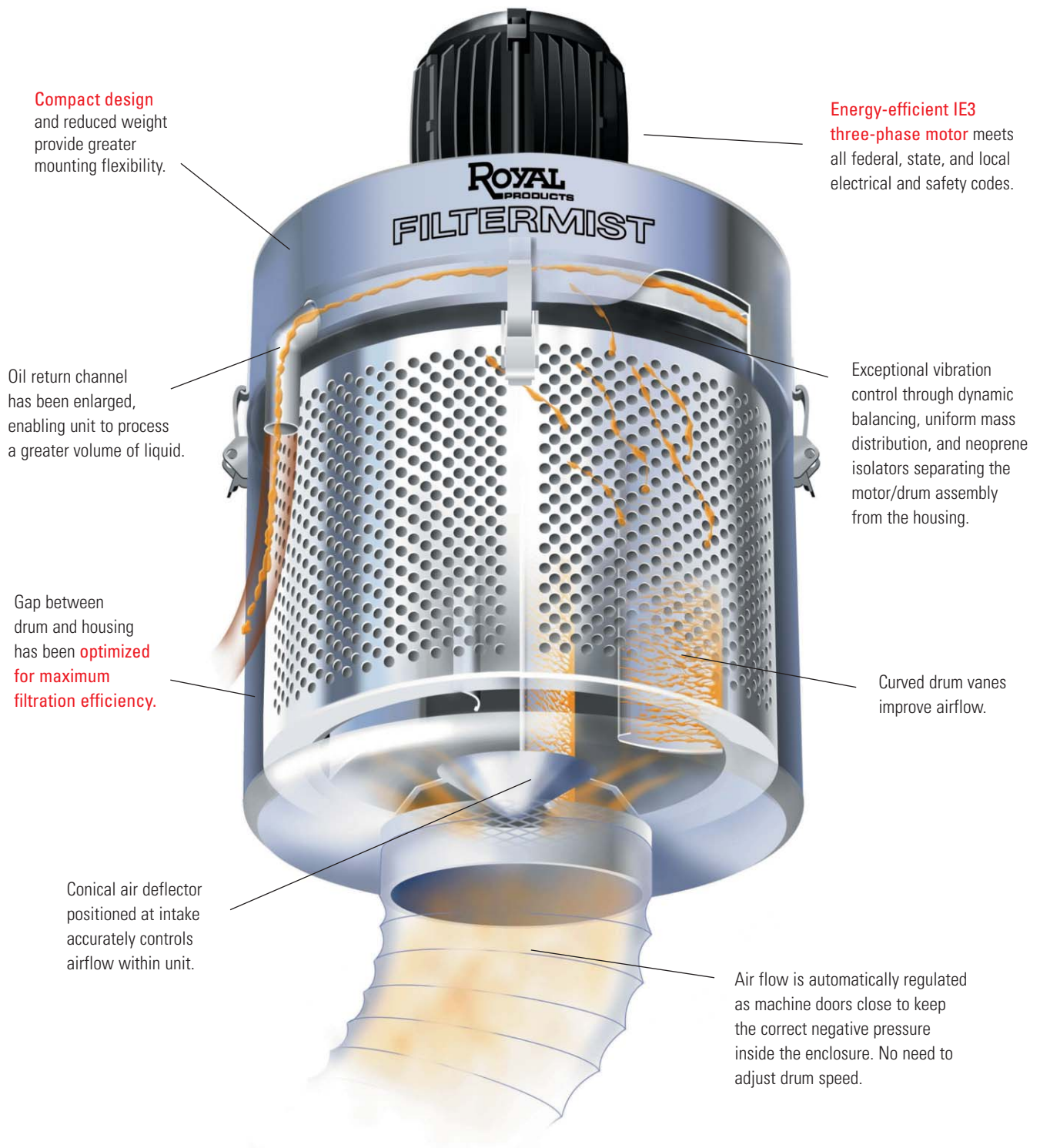
The Royal Filtermist uses the principle of centrifugal impaction to eliminate mist. With only three main components: a drum, a motor, and the housing, its operation is quite simple.

1. A three-phase motor rotates the internal drum at high speed, creating a vacuum which draws mist particles into the center of the drum.
2. The mist particles then collide with the rotating drum's vanes and are forced together with other particles, causing them to coalesce and form larger, droplet-sized particles.
3. As the particles grow into droplets, they pass through the perforations in the rotating drum and centrifugal force causes them to be thrown onto the inner wall of the housing.
4. The particles are then forced, under pressure, up the walls of the housing to the oil return channel, where they are subsequently drained back to the machine's coolant tank.
5. Clean, oil-free air blows past the motor and is returned to the shop.
6. Since this process relies on the mechanical principle of centrifugal impaction and the rotational speed remains constant, **the Royal Filtermist maintains a continuous high efficiency.**
7. For certain applications that produce smoke and/or very fine mist particles, an after filter may be required. This filter easily mounts to the top of the Filtermist unit by slipping over the motor and it is secured in place with two toggle clips. An after filter mounted to a Royal Filtermist typically enjoys a comparably long service life because most contaminants are removed by the impaction process prior to reaching the filter.

Note – it is important to understand that the pads that line the Filtermist drum are not filters. These porous pads are present to slow airflow through the unit, thereby maximizing contact with the drum vanes for greatest overall impaction efficiency.

FX SERIES DESIGN FEATURES

The Royal Filtermist FX Series is the ninth generation of Filtermist. FX Models incorporate a number of design improvements over previous versions to provide the most advanced and effective system available for the removal of mist and smoke.



WHY IS THE ROYAL FILTERMIST IS THE BEST CHOICE FOR THE METALWORKING INDUSTRY?

High Efficiency

The Royal Filtermist maintains a continuous high efficiency through constant drum speed. Performance does not decrease with use. See page 138 for efficiency information.

Low Maintenance

Because the unit works on a mechanical principle instead of electrostatics or multi-stage filters, the Royal Filtermist **requires significantly less maintenance** than most other filtration systems on the market. The small amount of regular maintenance that is required can be easily performed by the customer. See page 149 for maintenance information.

Heavy-Duty Construction

When you purchase a Royal Filtermist, you receive a quality product. Features found on all units include:

- ❑ Heavy-duty 3-phase motors that meet all federal, state and local electrical and safety codes.
- ❑ All exposed surfaces on the drum and housing are powder coated for wear resistance and long life.
- ❑ Very tight manufacturing tolerances provide precise fits between mating parts and ensure that the unit will provide years of trouble-free service.

Vibration Control

The Royal Filtermist incorporates unique features to help it overcome vibration-related problems that are sometimes associated with other centrifugal impaction type systems:

- ❑ All drums are dynamically balanced at the factory and tested before shipping.
- ❑ Vertical drum arrangement provides **even mass distribution**.
- ❑ Motor is connected to housing with four neoprene mounts, effectively isolating vibration and controlling startup torque.

Low Operating Costs

The Royal Filtermist is cost-effective to own and operate. Other types of systems (media, electrostatic, etc.) require frequent maintenance and costly filter replacement. Companies that sell these units often push expensive maintenance contracts that can far exceed the initial purchase price. Filtermist also consumes very little electrical power compared to other systems due to the use of **energy-efficient IE3 motors**. In fact, the tighter the machine enclosure, the lower the power draw.

No Heat/AC Waste

Processed air is returned to the shop, reducing heating and cooling costs. A/C service calls are also reduced by protecting intake filters from contaminants.

Flexibility

Units are portable and typically service individual machines, allowing machines to be easily moved or replaced. Large central systems are connected to multiple machines by costly and non-flexible ductwork, making relocation difficult.

Modular Design

The Royal Filtermist is a modular system. Accessories such as after filters, dust cyclones, noise attenuators, etc. can be easily added as applications require. See pages 132–133 for information on performance accessories.

Easy To Install

Multiple installation configurations allow the Filtermist to overcome almost any mounting obstacle. See pages 134–135 for mounting details.

Wide Range of Sizes

Four sizes ranging from 300–1200 cfm are available to suit all applications.

Strong Technical Support

A large network of local distributors and factory-trained representatives are strategically located throughout the country to provide quick and accurate on-site technical support.

5-Year Warranty

Every Royal Filtermist unit carries a **5-year warranty** against failure due to manufacturing defects. Other brands are only protected for 1–2 years. Please note that our warranty does not include normal wear and tear items such as drum pads, silencers, ductwork, etc. The motor carries a one-year warranty.

Proven Worldwide

There are over 150,000 units currently operating in over 40 countries worldwide, making Filtermist the world leader in metalworking pollution control equipment.

RISK-FREE PERFORMANCE GUARANTEE



Designed specifically to collect oil mist and smoke produced by metalworking machinery, the Royal Filtermist simply does the best job, over a longer period of time, for the lowest cost.

Still Not Convinced? Try a Unit Risk-Free!

We're so confident that the Royal Filtermist is the best solution for mist and smoke generated by metalworking machinery, we are willing to guarantee its performance. Our guarantee is simple:

Risk-Free Performance Guarantee



Royal Products will issue full credit on any Royal Filtermist unit returned within 45 days of the purchase date if the customer is not completely satisfied with its performance. The following conditions apply:

1. The unit must be sized and installed according to the recommendations of our local factory representative and/or authorized Filtermist distributor.
2. Credit will be issued for the unit, but may not be issued for ductwork, oil return hoses, etc., if they are not in resalable condition.
3. The customer must contact Royal Products for a return goods number (RGA #). This number must appear on all paperwork and packaging of the unit being returned.
4. The returned unit must be securely packaged and arrive at Royal Products in good condition.

So give us a call today at 1-800-645-4174 and let us help solve your mist and smoke problems. You'll be glad you did.

Royal Products offers a number of optional accessories designed to enhance Filtermist performance, particularly in very demanding applications. Please contact one of our engineers at 1-800-645-4174 if you have any questions regarding the use of these performance accessories.

After Filter



After filters are available for all Royal Filtermist models. They can be used in any application where extreme high efficiency is required, and are especially useful for dealing with the following conditions:

- ☐ Applications where heavy, dry smoke is generated along with the mist.
- ☐ Applications that produce very fine mist particles which may sometimes bypass the impaction process, (jobs that run at very high spindle speeds, high-pressure coolant, etc.).

Important — An after filter should not be used to compensate for blow-thru that could result from improper installation. If you have questions or concerns about your installation, please contact one of our engineers at 1-800-645-4174.

After Filter Advantages

Easy Installation

The Royal after filter simply slides over the Filtermist motor and is secured in place with two toggle clips.

High Efficiency

Adding an after filter to a Royal Filtermist unit will greatly **increase efficiency in the sub-micron range**. See page 138 for additional information on efficiency.

Noise Reduction

An after filter reduces the noise level of a Filtermist unit by approximately 3 dB.

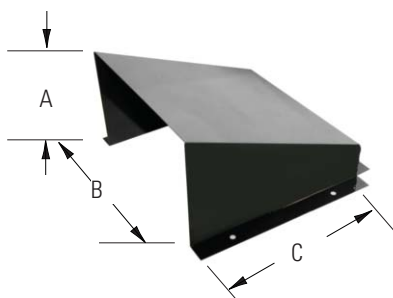
Long Life

Royal after filters have extended service lives due to their large surface area. They also last longer because the centrifugal impaction process of the Filtermist removes most of the pollutants before they ever reach the filter. Systems that rely entirely on media filters for the filtering process tend to have much shorter service lives.

Full Range

After filters are available for all size Filtermist units. Models are also available for older series units.

Chip Deflector



- ☐ Protects the Filtermist intake from chips and direct coolant splash.
- ☐ Opening is large enough to ensure that airflow and intake velocity are not negatively affected.
- ☐ **Powder coated finish** protects against rust.
- ☐ Can be used with all size Filtermist models.
- ☐ See page 135 for additional information on correct intake positioning.

MODEL	A	B	C
30220 (FX-900 & 1200)	6"	9 1/2"	10"
30222 (FX-300 & 575)	4 3/4"	8 1/2"	8 1/2"

Cyclonic Swarf Separator



- ❑ Recommended for applications that generate solid particles, such as wet grinding dust, cast iron fines, etc.
- ❑ Also good for high-speed aluminum milling that produces light fly-away chips.
- ❑ Cyclonic action removes solid particles, ensuring that only mist is drawn into the Filtermist unit.
- ❑ Acts as a great pre-filter for high pressure coolant applications.
- ❑ **Reduces maintenance in difficult applications such as heavy grinding.**
- ❑ Easily attaches to the bottom of the Filtermist unit. Note — the separator cannot be used in direct-mount applications.
- ❑ 6" diameter intake port is located on the side of the unit.
- ❑ 15ft. of return hose is included for continuous draining.
- ❑ Two-piece design allows for easy cleaning.
- ❑ Not for use in purely dry applications.
- ❑ For models FX-900 and FX-1200 only.
- ❑ Reduces throughput of Filtermist unit by approximately 300 cfm.



**Check out the Royal Filtermist Video
at www.mistcollectors.com**

MOUNTING OPTIONS

A wide variety of mounting options makes the Royal Filtermist very easy to install. If you have any questions regarding mounting, please contact one of our applications engineers at 1-800-645-4174.

	FX-300	FX-575	FX-900	FX-1200
Direct Mount	✓	✓	✓	✓
Suspended	-	-	✓	✓
Floor Stand	✓	✓	✓	✓
Machine Top Stand	✓	✓	✓	✓
Wall Mount	✓	✓	✓	✓
Machine Side Mount	✓	✓	✓ *	✓ *

* Can be accomplished using either wall bracket or modified floor stand.



Direct Mount

Typically used on enclosed machines such as CNC lathes. All Filtermist models can be mounted this way, but it is important to make sure that the mounting location is well suited to the application and does not interfere with any machine components.



Suspended Mount

Eye bolts included with the FX-900 and FX-1200 enable these units to be suspended from the factory ceiling. Suspension is a **low-cost mounting option** and is often the best choice for tall machines like large machining centers. Suspension is also a popular choice when a Filtermist unit will be servicing more than one machine.



Floor Stand

Floor stands are available for all models. The stand for models FX-300 and FX-575 is fixed at a height of 6 ft., while the stand for models FX-900 and FX-1200 can be adjusted from 6 ft. – 9 ft. Note that stands must be bolted to the factory floor to prevent tipping.



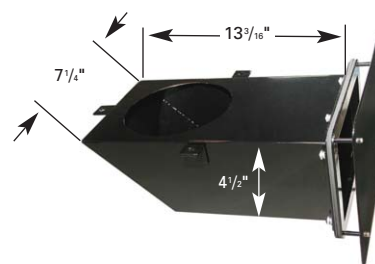
Machine Top Stand

This 3 ft. high stand enables all models to be mounted to the top of a machine, but offers advantages over direct mounting with its **small footprint** and flexible intake positioning.



Wall Mount

Wall mount brackets are available for all models. Depending upon the machine, it may be possible to use the wall mount bracket to mount a Filtermist to the side of a machine tool.



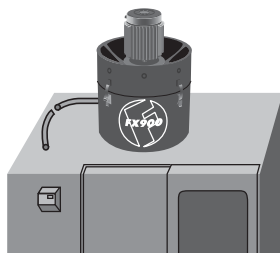
Machine Side Mount

We offer a special side mount bracket for models FX-300 and FX-575 that enables a Filtermist unit to be mounted to the outside wall of a machine tool without the need for any ducting. A built-in deflector protects against chips and coolant splash.

MOUNTING OPTIONS

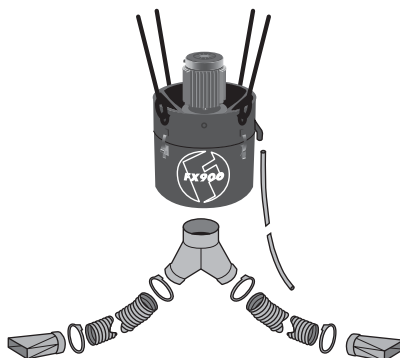
DIRECT MOUNT

- ☐ Unit
- ☐ Direct Mounting Kit
- ☐ Coolant Return Hose



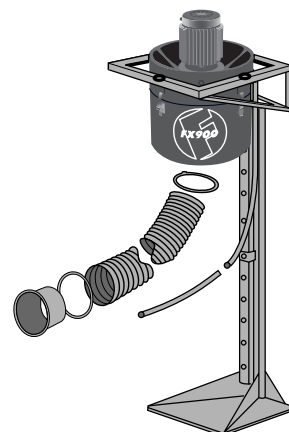
SUSPENDED MOUNT

- ☐ Unit
- ☐ Suspension Kit
- ☐ Coolant Return Hose
- ☐ Hose Clamps (4)
- ☐ Y-Junction
- ☐ Ducting
- ☐ Fishtails



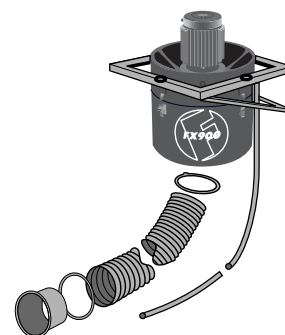
FLOOR STAND MOUNT

- ☐ Unit
- ☐ Floor Stand
- ☐ Coolant Return Hose
- ☐ Ducting
- ☐ Hose Clamps (2)
- ☐ Flange Adapter

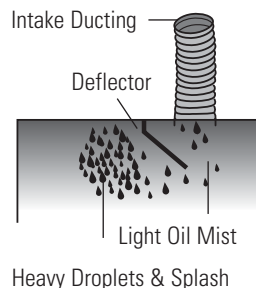


WALL MOUNT

- ☐ Unit
- ☐ Wall Bracket
- ☐ Coolant Return Hose
- ☐ Hose Clamps (2)
- ☐ Ducting
- ☐ Flange Adapter



Intake Position — Very Important



When installing a Filtermist unit, be sure to locate the intake in a position where it will collect mist, not splash. A common mistake is to locate the collection point too close to the cutting action, causing raw coolant and chips to be drawn into the unit. For example, the intake on a CNC lathe should be located near the tailstock-end of the machine, not over the chuck. Whenever possible, draw the mist across the enclosure from an area of heavy concentration to an area of lighter concentration.

For machines where the intake must be positioned near the cutting action, a deflector is often necessary (see page 132). A deflector protects the intake from chips and coolant yet allows mist and smoke to pass around it for collection.

Accessories

UNIT	INTAKE DIAMETER
FX-300	6"
FX-575	6"
FX-900	6"
FX-1200	8"

Royal Products offers a full array of mounting accessories to simplify installation, including flange adapters, reducers, fishtails, ducting, Y-junctions, etc. Please be sure to keep the correct Filtermist intake diameter in mind when ordering accessories.

Sizing Units

The Royal Filtermist is available in four sizes, based on throughput capacities: 300, 575, 900, and 1200 cfm. Royal Products maintains a database with specifications for many different machine tools, and we recommend you contact one of our applications engineers for your specific sizing requirements.



For those who would like a general rule of thumb, we recommend using the following formula to obtain a rough idea of your requirements:

Filtermist Size = Internal Enclosure Volume x 5

For example, suppose you have a small CNC lathe with an internal work envelope measuring 5ft. wide x 3ft. deep x 4ft. high. Multiplying 5x3x4, we see that the machine has an enclosure volume of 60 cu. ft. Multiplying 60x5 we see that 300 cfm is required, so we'd choose the model FX-300.

Although this rule is very simple, it is handy for determining the general size requirements.

If you are not sure which unit to use, please contact your local Royal Filtermist Distributor or one of our applications engineers.

Grinding



Grinding applications can sometimes be more demanding than typical turning and milling applications because grinding produces fine dust particles that become entrained in the mist stream. Over time, this dust can accumulate on the drum pads, resulting in the need for more frequent maintenance. If regular maintenance is not performed and a significant volume of solid matter builds up in the drum, balance and vibration issues may arise.

A simple way to overcome the problems associated with grinding dust is to fit the Filtermist with a cyclonic swarf separator. The separator mounts below the Filtermist unit and uses cyclonic action to separate out the solid matter, leaving the drum free to process the mist and preventing buildup on the pads. A valve on the bottom of the unit facilitates drainage.

Royal Products recommends using a cyclonic swarf separator for all grinding applications.



**Check out the Royal Filtermist Video
at www.mistcollectors.com**

CHOOSING THE CORRECT FILTERMIST UNIT

Turning



CNC lathes are relatively **easy applications to tackle** because the machines are usually well enclosed and direct mounting is often possible. On any well enclosed machine, it is recommended that the Filtermist intake point be located as far from the machining action as possible so that the mist is drawn from an area of heavy concentration to an area of lighter concentration. On CNC lathes, therefore, the ideal intake location is on the right side of the machine, near the tailstock. On subspindle lathes where the right-hand wall moves along the z-axis, it might be necessary for the Filtermist to have a more central location.

Milling



For enclosed machining centers, the Filtermist intake position should be located in an upper corner of the enclosure. Installation on open-top machines is not as clear-cut. If enclosing the machine is not possible, a successful installation can often be accomplished by **suspending the Filtermist unit above the machine** and running ducting down into the enclosure. It may be necessary to adjust the intake location so that it is close enough to the spindle to collect the mist, yet far enough away to keep chips from being drawn in. A Y-junction may be used to draw mist from both sides of the spindle, and a chip deflector may also come in handy.

High-Pressure Coolant

More and more machine tools today are equipped with high-pressure coolant systems. Machines running with high-pressure coolant tend to create more mist, and the particle size also tends to be smaller than normal. For most high-pressure coolant applications, the standard rules apply and Filtermist works very well. However, in some unique situations it may be necessary to take a different approach. Here are two ideas that may be worth considering:

- ❑ Downsize the Filtermist unit. On many high-pressure applications, we have seen the smaller models FX-300 and FX-575 work extremely well on large machines that would normally require a model FX-1200. Before downsizing, please speak to one of our applications engineers to ensure that this approach is the best one for your application.
- ❑ Add a cyclonic swarf separator. Although this device was designed for removing solid particles from the mist stream, it has proven itself to be quite **adept as a pre-filter for high-pressure coolant applications**. A large portion of the mist is actually removed by the cyclone, leaving the balance to be easily handled by the Filtermist unit.

Please keep in mind that the ideas presented in this section are simply suggestions, and may not be appropriate for your particular situation. If you have any questions regarding a Filtermist application, please contact one of our engineers at 1-800-645-4174 for assistance.

When evaluating the effectiveness of any mist collection system, two major aspects must be considered:

- ❑ The unit must be capable of handling the full volume of mist produced by the application.
- ❑ The unit must be efficient at capturing particles of all sizes.

Independent testing has proven the Royal Filtermist FX Series to be very effective at handling large volumes of mist and highly efficient at dealing with the full spectrum of particle sizes found in typical metalworking mist concentrations.

While a typical metalworking mist concentration is made up of many different-sized particles, 80–90% of these particles are larger than one micron in size. Fewer than 10% of the particles are smaller than 0.5 micron in size.

In order to effectively eliminate mist, the Royal Filtermist incorporates a two-phase process:

1. The first phase utilizes the mechanical process of centrifugal impaction. This centrifugal impaction process is the heart of the Filtermist's operating principle and it is highly effective at handling large volumes of mist.

The centrifugal impaction process is **almost 100% efficient at handling particles larger than one micron**, which make up the bulk of the mist. When considering a weighted average of the particle size in a typical metalworking mist concentration, overall efficiency of the impaction process is roughly 98%.

2. Many may consider an efficiency of 98% to be adequate for their needs. However, if additional efficiency is required, the Royal Filtermist FX Series units may be equipped with an after filter to handle the small amount of residual mist that bypasses the impaction process. Royal after filters use a carefully selected grade of media that provides an effective balance between being **fine enough to capture the smallest of particles** while still allowing the filter to enjoy a comparatively long service life. **Overall efficiency of a Royal Filtermist FX Series unit equipped with an after filter exceeds 99.5%.**

OSHA and NIOSH Standards

The OSHA and NIOSH limits on airborne mist particles are currently set at 5mg/m³. It is believed that in the coming years this level will be reduced by a factor of ten to a new level of 0.5 mg/m³. The Royal Filtermist FX is so efficient that when equipped with an after filter, it easily meets not only the current limit, but even the stricter proposed limit.

LOCATION	CONCENTRATION (mg / m ³)
Ambient Shop Air	0.75
FX-1200 Inlet	8.0 – 10.0
FX-1200 Exhaust	0.18

In a recent test carried out by an independent contractor, a Mori Seiki SL75ML was fitted with a model FX-1200 Filtermist unit and after filter. Particle counters were set up to monitor the air at three locations during machining — the ambient shop air, the Filtermist intake, and the Filtermist exhaust. The test results confirm that the Filtermist easily meets the challenge. Particle concentration levels at the Filtermist exhaust were well below 0.5 mg/m³. In fact, the air at **the Filtermist exhaust was four-times cleaner than the ambient shop air!**

IMPORTANT — The Royal Filtermist is designed to help your shop meet current and future air quality standards. It must be understood, however, that there are many variables involved in controlling shop pollution and we cannot guarantee that the Filtermist alone will prevent occupational diseases to workers. It is your responsibility to establish an effective overall industrial hygiene program designed to comply with OSHA and NIOSH standards. If you have any questions regarding this issue, please contact us at 1-800-645-4174.

COMMONLY ASKED FILTERMIST QUESTIONS

How do I select the correct Royal Filtermist for my application?

Page 136 of this catalog contains some basic sizing information, and you are always welcome to speak to one of our engineers at 1-800-645-4174 if you have any questions. We can also arrange to have one of our local regional managers visit your factory to check out your application and make the appropriate recommendations.

How do I order?

The Royal Filtermist system is sold in the U.S. through an exclusive network of authorized distributors. To find out who your local Royal Filtermist distributor is, please contact our customer service department at 1-800-645-4174.

How do Filtermist units ship?

All Filtermist FX Series **units (except the Ultra)** can be shipped via UPS. Due to dimensional limitations, the floor stand must ship by truck. When ordering multiple units, it is often more cost effective to ship by truck.



How do I install the Royal Filtermist in my shop?

The Royal Filtermist is a relatively easy piece of equipment to install, and most shops handle their own installations. Detailed instructions are included with each unit.

To ensure a smooth installation process, be sure you have ordered all of the necessary mounting and performance accessories. We recommend using the handy checklist featured on page 152. Please note that all accessories offered in this catalog have been tested for performance and safety. Substituting accessories with non-Royal items could void the Filtermist warranty, affect performance, and result in dangerous operating conditions.

What about wiring?



The three-phase Filtermist motor must be wired in conjunction with a motor starter switch, which can be purchased through Royal Products. We suggest you have a licensed electrician perform the wiring of the unit. Detailed instructions can be found in the installation manual that is supplied with each unit.

How often do the drum pads need to be changed?



An important aspect to understand about the Royal Filtermist is that **the drum pads are not filters**. These porous pads are present to slow airflow through the unit, thereby maximizing contact with the drum vanes for greatest overall impaction efficiency.

Because the Royal Filtermist utilizes the mechanical process of centrifugal impaction to eliminate mist, maintenance requirements are minimal. As a result, some customers have reported that they have had units operating for up to five years without ever needing to change the drum pads.

For guidelines regarding Filtermist maintenance, please see page 149.

What happens if I have a problem?

In addition to our large network of authorized distributors, Royal Products employs Regional Business Managers and over **50 factory-trained representatives located throughout the country**. In the event of a problem that cannot be solved over the phone, we will arrange for a local Royal Products representative to visit your factory and work with you towards a solution. We firmly believe that after-sales support is as important as the sale itself, and we are committed to this effort.

MODEL FX-300



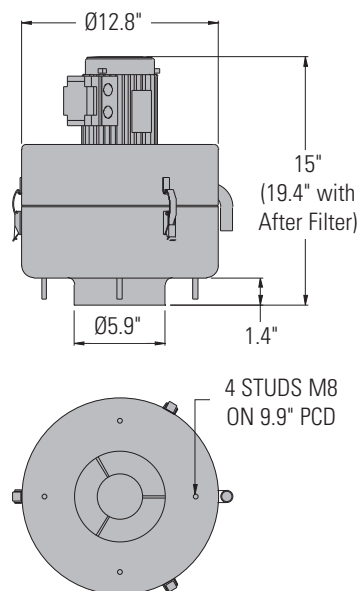
- ❑ Used primarily on small, enclosed CNC machines with an internal volume of up to 80 cu. ft.
- ❑ Large 6" dia. intake results in a **very low intake velocity**, reducing the likelihood that chips and large droplets will be drawn into the unit.
- ❑ The model FX-300 comes complete with a collar seal, mounting hardware, and 5 ft. of coolant return hose.
- ❑ Designed primarily for direct-mounting to the top of a machine, but stands and brackets are also available for applications where direct-mounting is not possible.
- ❑ Stainless steel model (type 304) available for special applications such as food processing and aqueous parts washers.

FX-300 Specifications

Airflow	295 cfm
Fits machines with enclosure volume of:	Up to 80 cubic feet
Motor	3/4 HP, 3-Phase, 50/60 Hz. Voltage & Current @ 60Hz: 208V – 2.6A 230V – 2.6A 460V – 1.4A
Weight	31 lbs.
Noise Level	65 dBA
Inlet Diameter	6"

Mounting Options — FX-300

Direct Mount	Hardware included with Filtermist Unit
Floor Stand	use 30316 — Floor Stand "A"
Machine Top Stand	use 30319 — Machine Top Stand "A"
Wall Mount	use 30328 — Wall Bracket "A"
Machine Side Mount	use 30330 — Side-Mount Bracket "A"
Suspended	N/A



MODEL FX-300

Filtermist Units

DESCRIPTION	PART NUMBER	PRICE
 FX-300 Filtermist Unit Includes collar seal and all necessary hardware to mount unit directly to the top of a machine. Also includes 5 ft. of coolant return hose.	30105	\$1,925
 FX-300 Stainless Steel Unit	30165	\$3,680

Electrical Accessories

DESCRIPTION	PART NUMBER	PRICE
 Starter Box Kit Includes NEMA 12 box, IEC motor starter, 20 ft. of input cable, 15 ft. of output cable with turn-lock connector	FX-300 & 575 Low-Voltage (208/230V) 30470 FX-300 & 575 High-Voltage (460V) 30471	\$522 \$522

Performance Accessories

DESCRIPTION	PART NUMBER	PRICE
 After Filter "A" Used for collecting dry smoke and very fine mist particles.	30200	\$299
 Chip Deflector "A" Protects intake from coolant splash and chips.	30222	\$56



See Page 131

Mounting Accessories

DESCRIPTION	PART NUMBER	PRICE
 Side Mounting Bracket "A" Allows unit to be mounted to the side of a machine tool. Includes hardware and chip deflector.	30330	\$299
 Floor Stand "A" Fixed height of 6 ft. Bolts to floor for safety.	30316	\$481
 Machine Top Stand "A" 28" tall stand bolts to the top of a machine	30319	\$314
 Wall Bracket "A" For mounting unit to a wall or side of a machine.	30328	\$166
 Coolant Return Hose 3/4" diameter.	30335	\$4/ft.
 Ducting Flexible vinyl with heavy wire support.	8" 30344 6" 30342 4" 30340	\$16/ft. 13/ft. 9/ft.
Warning — never use sheetmetal ducting or any other type that could leak and cause a hazardous condition.		
 Ducting Clamps For securing ducting to accessories.	8" 30354 6" 30352 4" 30350	\$5 5 4
 Y-Junctions For multiple pickup locations.	A B 8" 6" 8" 4" 6" 6" 6" 4" 4" 4"	30368 30366 30364 30362 30360 \$295 365 271 260 213
 Flange Adapters For securing ducting directly to an enclosed machine.	8" 30374 6" 30372 4" 30370	\$64 62 59
 Reducers	A B 8" 6" 6" 4"	30382 30380 \$112 112
 Fishtails	A B 8" 11.75" x 5" 6" 10" x 4.5" 4" 8.25" x 3.5"	30394 30392 30390 \$213 192 177

MODEL FX-575



- ❑ For use on enclosed machines with an internal volume between 60 cu. ft. and 120 cu. ft.
- ❑ Designed primarily for direct-mounting to the top of a machine, but stands and brackets are also available for applications where direct-mounting is not possible.
- ❑ Stainless steel model (type 304) available for special applications such as food processing and aqueous parts washers.

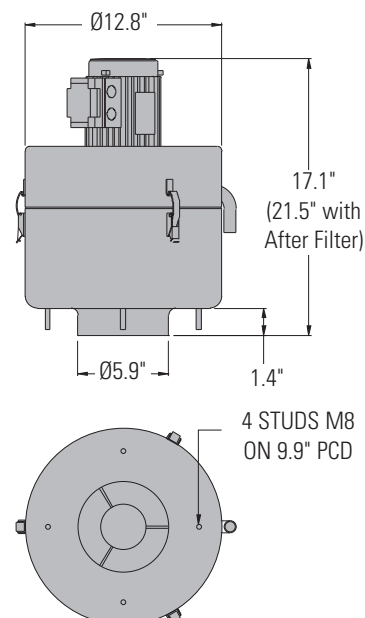


FX-575 Specifications

Airflow	560 cfm
Fits machines with enclosure volume of:	60–120 cubic feet
Motor	3/4 HP, 3-Phase, 50/60 Hz. Voltage & Current @ 60Hz. 208V – 2.6A 230V – 2.6A 460V – 1.4A
Weight	35 lbs.
Noise Level	67 dBA
Inlet Diameter	6"

Mounting Options — FX-575

Direct Mount	Hardware included with Filtermist Unit
Floor Stand	use 30316 — Floor Stand "A"
Machine Top Stand	use 30319 — Machine Top Stand "A"
Wall Mount	use 30328 — Wall Bracket "A"
Machine Side Mount	use 30330 — Side-Mount Bracket "A"
Suspended	N/A



MODEL FX-575

Filtermist Units

DESCRIPTION	PART NUMBER	PRICE
 FX-575 Filtermist Unit Includes collar seal and all necessary hardware to mount unit directly to the top of a machine. Also includes 5 ft. of coolant return hose.	30115	\$2,375
 FX-575 Stainless Steel Unit	30185	\$4,105

Electrical Accessories

DESCRIPTION	PART NUMBER	PRICE
 Starter Box Kit Includes NEMA 12 box, IEC motor starter, 20 ft. of input cable, 15 ft. of output cable with turn-lock connector	FX-300 & 575 Low-Voltage (208/230V) 30470 FX-300 & 575 High-Voltage (460V) 30471	\$522 \$522

Performance Accessories

DESCRIPTION	PART NUMBER	PRICE
 After Filter "A" Used for collecting dry smoke and very fine mist particles.	30200	\$299
 Chip Deflector "A" Protects intake from coolant splash and chips.	30222	\$56



See Page 131

Mounting Accessories

DESCRIPTION			PART NUMBER	PRICE
	Side Mounting Bracket "A" Allows unit to be mounted to the side of a machine tool. Includes hardware and chip deflector.		30330	\$299
	Floor Stand "A" Fixed height of 6 ft. Bolts to floor for safety.		30316	\$481
	Machine Top Stand "A" 28" tall stand bolts to the top of a machine		30319	\$314
	Wall Bracket "A" For mounting unit to a wall or side of a machine.		30328	\$166
	Coolant Return Hose 3/4" diameter.		30335	\$4/ft.
	Ducting Flexible vinyl with heavy wire support.	8" 6" 4"	30344 30342 30340	\$16/ft. 13/ft. 9/ft.
Warning — never use sheetmetal ducting or any other type that could leak and cause a hazardous condition.				
	Ducting Clamps For securing ducting to accessories.	8" 6" 4"	30354 30352 30350	\$5 5 4
	Y-Junctions For multiple pickup locations.	A B 8" 6" 8" 4" 6" 6" 6" 4" 4" 4"	30368 30366 30364 30362 30360	\$295 365 271 260 213
	Flange Adapters For securing ducting directly to an enclosed machine.	8" 6" 4"	30374 30372 30370	\$64 62 59
	Reducers	A B 8" 6" 6" 4"	30382 30380	\$112 112
	Fishtails For use on open machines.	A B 8" 11.75" x 5" 6" 10" x 4.5" 4" 8.25" x 3.5"	30394 30392 30390	\$213 192 177

MODEL FX-900



- ❑ For use on enclosed machines with an internal volume between 90 cu. ft. and 180 cu. ft.
- ❑ **Popular for open machines** requiring a Y-junction and two intake points.
- ❑ Unit can be mounted directly to the machine, on stands, on brackets, or suspended.
- ❑ Stainless steel model (type 304) available for special applications such as food processing and aqueous parts washers.

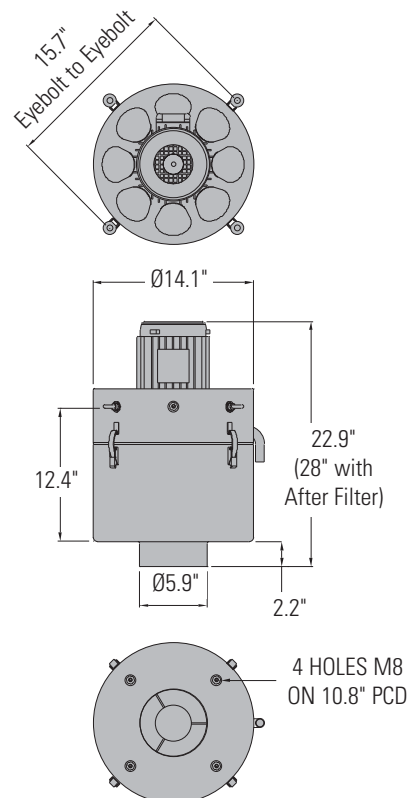


FX-900 Specifications

Airflow	900 cfm
Fits machines with enclosure volume of:	90–180 cubic feet
Motor	3 HP, 3-Phase, 50/60 Hz. Voltage & Current @ 60Hz. 208V – 9.2A 230V – 9.2A 460V – 4.6A
Weight	51 lbs.
Noise Level	70 dBA
Inlet Diameter	6"

Mounting Options — FX-900

Direct Mount	use 30302 — FX-900 Direct Mount Kit
Floor Stand	use 30315 — Floor Stand "B"
Machine Top Stand	use 30314 — Machine Stand "B"
Wall Mount	use 30320 — Wall Bracket "B"
Machine Side Mount	use 30320 — Wall Bracket "B"
Suspended	use 30310 — Suspension Kit "B"



MODEL FX-900

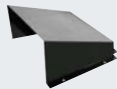
Filtermist Units

DESCRIPTION	PART NUMBER	PRICE
 FX-900 Filtermist Unit Order performance and mounting accessories separately.	30120	\$2,970
 FX-900 Stainless Steel Unit	30160	\$4,695

Electrical Accessories

DESCRIPTION	PART NUMBER	PRICE
 Starter Box Kit Includes NEMA 12 box, IEC motor starter, 20 ft. of input cable, 15 ft. of output cable with turn-lock connector	FX-900 & 1200 Low-Voltage (208/230V) 30472	\$522
	FX-900 & 1200 High-Voltage (460V) 30473	\$522

Performance Accessories

DESCRIPTION	PART NUMBER	PRICE
 After Filter "B" Used for collecting dry smoke and very fine mist particles.	30205	\$315
 Cyclonic Swarf Separator For use on applications such as grinding and cast iron machining where very fine solid particles are entrained in the mist stream. Also acts as a great pre-filter for high pressure coolant applications.	30210	\$798
 Chip Deflector "B" Protects intake from coolant splash and chips.	30220	\$56



See Page 131

Mounting Accessories

DESCRIPTION	PART NUMBER	PRICE
 Direct Mount Kit (FX-900) Includes 6" collar seal, set of rigid mounting studs, and hardware.	30302	\$80
 Floor Stand "B" Adjusts from 6 ft. to 9 ft. Bolts to floor for safety.	30315	\$838
 Machine Top Stand "B" 3 ft. tall stand bolts to the top of a machine.	30314	\$443
 Wall Bracket "B" Can be used to mount unit to a wall or other suitable mounting surface.	30320	\$298
 Suspension Kit "B" Includes 30 ft. of chain, 4 eyebolts, 8 split links, and 1 adjustable link.	30310	\$126
 Coolant Return Hose 3/4" diameter.	30335	\$4/ft.
 Ducting Flexible vinyl with heavy wire support.	8" 6" 4" 30344 30342 30340	\$16/ft. 13/ft. 9/ft.
Warning — never use sheetmetal ducting or any other type that could leak and cause a hazardous condition.		
 Ducting Clamps For securing ducting to accessories.	8" 6" 4" 30354 30352 30350	\$5 5 4
 Y-Junctions For multiple pickup locations.	A B 8" 6" 8" 4" 6" 6" 6" 4" 4" 4" 30368 30366 30364 30362 30360	\$295 365 271 260 213
 Flange Adapters For securing ducting directly to an enclosed machine.	8" 6" 4" 30374 30372 30370	\$64 62 59
 Reducers	A B 8" 6" 6" 4" 30382 30380	\$112 112
 Fishtails For use on open machines.	A B 8" 11.75" x 5" 6" 10" x 4.5" 4" 8.25" x 3.5" 30394 30392 30390	\$213 192 177

MODEL FX-1200



- ❑ For use on enclosed machines with an internal volume of 120 cu. ft. or larger.
- ❑ Popular for machines requiring Y-junction and two intake points.
- ❑ **Excellent choice for large machining centers.**
- ❑ Unit can be mounted directly to the machine, on stands, on brackets, or suspended.
- ❑ Stainless steel model (type 304) available for special applications such as food processing and aqueous parts washers.

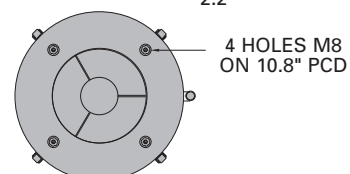
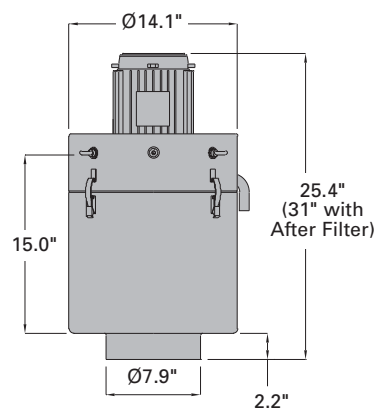
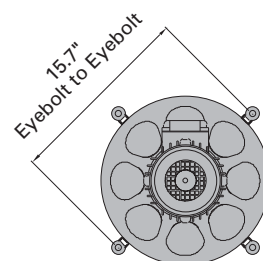


FX-1200 Specifications

Airflow	1200 cfm
Fits machines with enclosure volume of:	120 cubic feet or larger
Motor	3 HP, 3-Phase, 50/60 Hz. Voltage & Current @ 60Hz. 208V - 9.2A 230V - 9.2A 460V - 4.6A
Weight	64 lbs.
Noise Level	72 dBA
Inlet Diameter	8"

Mounting Options — FX-1200

Direct Mount	use 30304 — FX-1200 Direct Mount Kit
Floor Stand	use 30315 — Floor Stand "B"
Machine Top Stand	use 30314 — Machine Stand "B"
Wall Mount	use 30320 — Wall Bracket "B"
Machine Side Mount	N/A
Suspended	use 30310 — Suspension Kit "B"



MODEL FX-1200

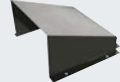
Filtermist Units

DESCRIPTION	PART NUMBER	PRICE
 FX-1200 Filtermist Unit Order performance and mounting accessories separately.	30130	\$3,120
 FX-1200 Stainless Steel Unit	30170	\$5,115

Electrical Accessories

DESCRIPTION	PART NUMBER	PRICE
 Starter Box Kit Includes NEMA 12 box, IEC motor starter, 20 ft. of input cable, 15 ft. of output cable with turn-lock connector	FX-900 & 1200 Low-Voltage (208/230V) 30472	\$522
	FX-900 & 1200 High-Voltage (460V) 30473	\$522

Performance Accessories

DESCRIPTION	PART NUMBER	PRICE
 After Filter "B" Used for collecting dry smoke and very fine mist particles.	30205	\$315
 Cyclonic Swarf Separator For use on applications such as grinding and cast iron machining where very fine solid particles are entrained in the mist stream. Also acts as a great pre-filter for high pressure coolant applications.	30210	\$798
 Chip Deflector "B" Protects intake from coolant splash and chips.	30220	\$56



See Page 131

Mounting Accessories

DESCRIPTION	PART NUMBER	PRICE
 Direct Mount Kit (FX-1200) Includes 8" collar seal, set of rigid mounting studs, and hardware.	30304	\$80
 Floor Stand "B" Adjusts from 6 ft. to 9 ft. Bolts to floor for safety.	30315	\$838
 Machine Top Stand "B" 3 ft. tall stand bolts to the top of a machine.	30314	\$443
 Wall Bracket "B" Can be used to mount unit to a wall or other suitable mounting surface.	30320	\$298
 Suspension Kit "B" Includes 30 ft. of chain, 4 eyebolts, 8 split links, and 1 adjustable link.	30310	\$126
 Coolant Return Hose 3/4" diameter.	30335	\$4/ft.
 Ducting Flexible vinyl with heavy wire support.	8" 6" 4" 30344 30342 30340	\$16/ft. 13/ft. 9/ft.
Warning — never use sheetmetal ducting or any other type that could leak and cause a hazardous condition.		
 Ducting Clamps For securing ducting to accessories.	8" 6" 4" 30354 30352 30350	\$5 5 4
 Y-Junctions For multiple pickup locations.	A B 8" 6" 8" 4" 6" 6" 6" 4" 4" 4" 30368 30366 30364 30362 30360	\$295 365 271 260 213
 Flange Adapters For securing ducting directly to an enclosed machine.	8" 6" 4" 30374 30372 30370	\$64 62 59
 Reducers	A B 8" 6" 6" 4" 30382 30380	\$112 112
 Fishtails For use on open machines.	A B 8" 11.75" x 5" 6" 10" x 4.5" 4" 8.25" x 3.5" 30394 30392 30390	\$213 192 177



- ❑ The Filtermist Ultra™ is a comprehensive mist collection system that handles **virtually all applications**:
 - Turning
 - Milling
 - Grinding
 - Cast Iron Machining
 - Coolant Pressure up to 1500 psi
- ❑ Easy Installation – our powerful FX-1200 mist collector is pre-mounted to a rugged mobile cart, eliminating the need for any additional stands or brackets.
- ❑ Compact footprint, (19" x 20"), enables convenient locating behind the chip conveyor of most machines.
- ❑ An integral cyclone acts as a pre-filter to remove dust, fines, and large droplets, greatly improving overall performance and minimizing maintenance.
- ❑ For use on any machine with an internal volume greater than 60 cu. ft.
- ❑ High-pressure coolant **rated to 1500 psi**.
- ❑ Dual discharge ports support continuous drainage back to the machine tool coolant sump.
- ❑ Simple ordering – one part number takes care of everything.
- ❑ Includes the following:
 - Model FX-1200 Filtermist Mist Collector
 - Rugged Mobile Cart with Locking Casters
 - Integral Cyclonic Pre-Filter
 - 20 ft. of 6" Dia. Ducting
 - 6" Dia. Flange Adapter
 - Two 6" Dia. Ducting Clamps
 - 6 ft. of Coolant Return Hose

DESCRIPTION		PART NUMBER	PRICE
 Filtermist Ultra™ Includes Model FX-1200 Filtermist unit, mobile cart, integral cyclone, 6 ft. coolant return hose, 20 ft. 6" dia. ducting, 6" dia. flange adapter, two 6" dia. ducting clamps		30312	\$5,495
 Starter Box Kit Includes NEMA 12 box, IEC motor starter, 20 ft. of input cable, 15 ft. of output cable with turn-lock connector	Low-Voltage (208/230V)	30472	\$522
	High Voltage (460V)	30473	\$522
 After Filter "B" Used for collecting dry smoke and very fine mist particles		30205	\$315

The integral cyclone aids in particle separation and greatly reduces maintenance requirements.

Pre-plumbed for easy drainage back to machine coolant sump.



FILTERMIST MAINTENANCE

One of the most popular features of the Royal Filtermist is the fact that it requires minimal maintenance. Unlike media-type systems and electrostatic units, the Royal Filtermist **works almost as well when it is dirty as it does when it is clean.**

For safety purposes, it is necessary to periodically inspect the main components of the Royal Filtermist for wear or damage, especially if the unit is making loud noises or exhibiting vibration. Additionally, we recommend that these simple inspection/maintenance procedures be carried out every 2,000 operating hours, (every 1,000 hours for more demanding applications):

- ❑ Inspect the drum pads for wear and/or matter buildup that could affect airflow or cause vibration, and replace as necessary. It is important to understand that the pads that line the Filtermist drum are not filters. Their presence slows airflow through the unit, thereby maximizing contact with the drum vanes for greatest overall impaction efficiency.
- Some customers report not having to change drum pads in certain applications for periods of up to five years.** While this may or may not be the case in your application, it is important to understand that any visible sign of vibration is often related to solid matter buildup and should be addressed immediately.
- ❑ Inspect and replace the motor mounts and torque limiting straps if worn or damaged.
- ❑ Inspect silencer and replace if worn or damaged. If the silencer is saturated with oil, it is important to investigate the reason why. This could be the result of a clogged oil return channel or incorrect drum



rotation. Important — the Filtermist will create suction regardless of which way the drum spins, but it will only properly collect and return oil mist if the drum is spinning in the proper direction as indicated by the arrow on the housing.

- ❑ Inspect the housing seal and replace if necessary. This is especially important on older series units. The redesigned housing of the Filtermist FX Series virtually eliminates the chance of leakage around the seal area.
- ❑ Check all mounting fixtures such as stands and suspension kits for damage or signs of fatigue. Repair or replace as necessary.
- ❑ Check all other accessories for wear and/or damage (ducting, flange adapters, etc.). Repair or replace as necessary.
- ❑ For your convenience, **Royal Products offers complete maintenance kits for all Filtermist units.** These value-priced kits include a drum pad set, a motor mount set, a silencer, and a housing seal. These items are also available separately.

IMPORTANT — The recommended maintenance schedule and procedures outlined above are meant to serve as a guide for most common Filtermist applications. More detailed information is provided in the Royal Filtermist Installation and Maintenance Manual. When dealing with any equipment of this type, common sense must prevail. Any unsafe conditions pertaining to the Royal Filtermist must be immediately attended to. It is also important to understand that when Royal Filtermist units are used in demanding applications such as grinding or cast iron machining, more frequent maintenance may be required. If you have any questions regarding the maintenance or operation of your Royal Filtermist units, please refer to the Royal Filtermist Installation and Maintenance Manual or contact one of our engineers at 1-800-645-4174.

Maintenance Items

	FX-300		FX-575		FX-900		FX-1200	
DESCRIPTION	PART NUMBER	PRICE	PART NUMBER	PRICE	PART NUMBER	PRICE	PART NUMBER	PRICE
Complete Maintenance Kit Complete kit provides a cost savings over individual components. Includes the following: drum pad set, silencer, housing seal, and motor mount set.	30500	\$141	30506	\$167	30402	\$202	30404	\$213
Drum Pad Set	30410	\$34	30416	\$53	30412	\$64	30414	\$70
Silencer	30520	\$72	30520	\$72	30422	\$126	30422	\$126
Housing Seal	30430	\$17	30430	\$17	30432	\$20	30432	\$20
Motor Mount Set	30440	\$57	30440	\$57	30442	\$97	30442	\$97

See page 151 for maintenance items for older series Filtermist units.

REPLACEMENT PARTS



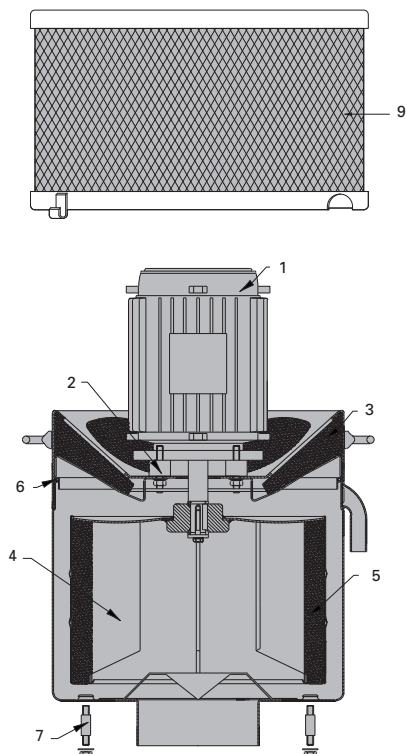
Serial Number Label

On this unit, the white label with the black text indicates a series 8 model.

Royal Products offers a full array of replacement parts for all Filtermist models. When ordering replacement parts, it is very important that you identify the correct series and model. The series is determined by the color of the serial number label, located on the upper portion of the housing near the motor. The color code is as follows:

Series 6 — Black label, silver text.
 Series 8 — White label, black text.
 Series 7 — Yellow label, black text.
 FX Series — Blue label, white text.

FX Series Only



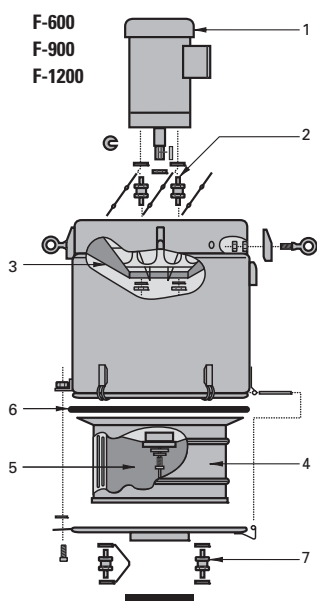
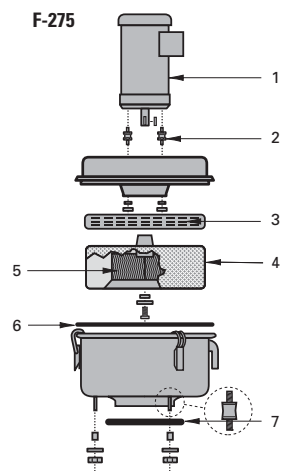
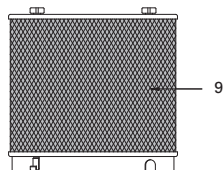
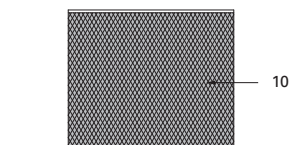
NOTE — The parts on this page are for Filtermist FX Series models with a blue serial number label. If you have an older model Filtermist unit with a white, yellow, or black serial number label, please see page 151.

ITEM NUMBER	DESCRIPTION	FILTERMIST MODEL	BLUE LABEL (FX Series)
1	Motor	FX-275/300	30450
		FX-550/575	30450
		FX-600	30452
		FX-900	30454
		FX-1200	30454
2	Motor Mount Set Includes four mounts and required hardware.	FX-275/300	30440
		FX-550/575	30440
		FX-600	30442
		FX-900	30442
		FX-1200	30442
3	Silencer	FX-275/550	30420
		FX-300/575	30520
		FX-600	30422
		FX-900	30422
		FX-1200	30422
4	Drum	FX-275	30460
		FX-300	30560
		FX-550	30466
		FX-575	30566
		FX-600	30462
		FX-900	30462
		FX-1200	30464
5	Drum Pads (set of 4)	FX-275/300	30410
		FX-550/575	30416
		FX-600	30412
		FX-900	30412
		FX-1200	30414
6	Housing Seal	FX-275/300	30430
		FX-550/575	30430
		FX-600	30432
		FX-900	30432
		FX-1200	30432
7	Direct Mounting Kit Includes collar seal, mounts, and required hardware.	FX-275/300	N/A
		FX-550/575	N/A
		FX-600	30300
		FX-900	30302
		FX-1200	30304
8	Complete Maintenance Kit Includes items 2, 3, 5 and 6.	FX-275	30400
		FX-300	30500
		FX-550	30406
		FX-575	30506
		FX-600	30402
		FX-900	30402
		FX-1200	30404
9	Complete After Filter Fits over the Filtermist motor. Includes 1-pc. housing/filter element, and toggle clips.	FX-275/300	30200
		FX-550/575	30200
		FX-600	30205
		FX-900	30205
		FX-1200	30205

For all other replacement parts, please contact us at 1-800-645-4174.

REPLACEMENT PARTS – OLDER MODELS

Series 6, 7, and 8 (Pre-2004)



ITEM NUMBER	DESCRIPTION	FILTERMIST MODEL	WHITE LABEL (Series 8)	YELLOW LABEL (Series 7)	BLACK LABEL (Series 6)
1	Motor	F-275 F-600 F-900 F-1200	30450 R35L234-672 R35L234-863 R35L234-863	30450 R35L234-672 R35L234-863 N/A	30450 R35L234-672 R35L234-863 N/A
2	Motor Mount Set Includes four mounts and required hardware.	F-275 F-600 F-900 F-1200	30440 30442 30442 30442	30440 30442 30442 N/A	30440 30442 30442 N/A
3	Silencer	F-275 F-600 F-900 F-1200	30420 28181N 28181N 28181N	30420 28181N 28181N N/A	30420 N/A N/A N/A
4	Drum	F-275 F-600 F-900 F-1200	30460 28167 28167 28166	30460 28167 28166 N/A	30460 28167 28166 N/A
5	Drum Pads (set of 4)	F-275 F-600 F-900 F-1200	30410 28209 28209 28207	30410 28212 28210 N/A	30410 28212 28210 N/A
6	Housing Seal	F-275 F-600 F-900 F-1200	28176 28178N 28178N 28178N	28176 28178N 28178N N/A	28179 28178 28178 N/A
7	Direct Mounting Kit Includes collar seal, mounts, and required hardware.	F-275 F-600 F-900 F-1200	N/A 28205 28203 28201	28194 28203 28203 N/A	28194 28203 28203 N/A
8	Complete Maintenance Kit Includes items 2, 3, 5 and 6.	F-275 F-600 F-900 F-1200	28008 28015 28015 28017	28008 28007 28006 N/A	N/A N/A N/A N/A
9	Complete After Filter Fits over the Filtermist motor. Includes housing, filter element, and toggle clips.	F-275 F-600 F-900 F-1200	28158 28164 28164 28164	28158 28164 28164 N/A	28158 28164 28164 N/A
10	After Filter — Replacement Element Only	F-275 F-600 F-900 F-1200	28159 28165 28165 28165	28159 28165 28165 N/A	28159 28165 28165 N/A
11	Drum Puller	All Units	28014	28014	28014

For all other replacement parts, please contact us at 1-800-645-4174.

NOTE — The parts on this page are for older series Filtermist units sold thru mid 2004. See page 150 for Filtermist FX Series components.

FILTERMIST ORDERING SHEET



When placing a Filtermist order, please use this sheet to help our engineers verify that you have selected the correct Filtermist unit and accessories for your particular application.

Company: _____ Contact Name: _____

Tel: _____ Fax: _____

Machine Make and Model: _____

Internal Volume of Machine Enclosure (see page 120 for sizing information): _____

FILTERMIST UNITS	PART NUMBER	QTY.	LIST PRICE
FX-300	30105		\$1,925
FX-575	30115		\$2,375
FX-900	30120		\$2,970
FX-1200	30130		\$3,120
FX-300 Stainless Steel	30165		\$3,680
FX-575 Stainless Steel	30185		\$4,105
FX-900 Stainless Steel	30160		\$4,695
FX-1200 Stainless Steel	30170		\$5,115
Filtermist Ultra	30312		\$5,495

ELECTRICAL INSTALLATION PACKAGES	PART NUMBER	QTY.	LIST PRICE
Low-Voltage (208/230V) (FX-300 & 575)	30470		\$522
High-Voltage (460V) (FX-300 & 575)	30471		\$522
Low-Voltage (208/230V) (FX-900 & 1200)	30472		\$522
High-Voltage (460V) (FX-900 & 1200)	30473		\$522

PERFORMANCE ACCESSORIES	PART NUMBER	QTY.	LIST PRICE
After Filter "A" (FX-300 & 575)	30200		\$299
After Filter "B" (FX-900 & 1200)	30205		\$315
Cyclonic Swarf Separator (FX-900 & 1200)	30210		\$798
Chip Deflector "A" (FX-300 & FX-575)	30222		\$56
Chip Deflector "B" (FX-900 & 1200)	30220		\$56

MAINTENANCE ITEMS	PART NUMBER	QTY.	LIST PRICE
Complete Maintenance Kit (FX-300)	30500		\$141
Complete Maintenance Kit (FX-575)	30506		\$167
Complete Maintenance Kit (FX-900)	30402		\$202
Complete Maintenance Kit (FX-1200)	30404		\$213

MOUNTING ACCESSORIES	PART NUMBER	QTY.	LIST PRICE
Direct Mount Kit (FX-900)	30302		\$80
Direct Mount Kit (FX-1200)	30304		\$80
Suspension Kit "B"	30310		\$126
Floor Stand "A" (FX-300 & 575)	30316		\$481
Floor Stand "B" (FX-900 & 1200)	30315		\$838
Wall Bracket "A" (FX-300 & 575)	30328		\$166
Wall Bracket "B" (FX-900 & 1200)	30320		\$298
Machine Top Stand "A" (FX-300 & 575)	30319		\$314
Machine Top Stand "B" (FX-900 & 1200)	30314		\$443
Side Mount Bracket "A" (FX-300 & 575)	30330		\$299
Coolant Return Hose	30335		\$4/ft.
Ducting (4")	30340		\$9/ft.
Ducting (6")	30342		\$13/ft.
Ducting (8")	30344		\$16/ft.
Ducting Clamp (4")	30350		\$4
Ducting Clamp (6")	30352		\$5
Ducting Clamp (8")	30354		\$5
Y-Junction (4x4x4)	30360		\$213
Y-Junction (6x4x4)	30362		\$260
Y-Junction (6x6x6)	30364		\$271
Y-Junction (8x4x4)	30366		\$365
Y-Junction (8x6x6)	30368		\$295
Flange Adapter (4")	30370		\$59
Flange Adapter (6")	30372		\$62
Flange Adapter (8")	30374		\$64
Reducer (6x4)	30380		\$112
Reducer (8x6)	30382		\$112
Fishtail (4")	30390		\$177
Fishtail (6")	30392		\$192
Fishtail (8")	30394		\$213

SUPERCHARGE YOUR MACHINE TOOLS



ROYAL
PRODUCTS
Optimize everything.

Royal Products, Division of Curran Manufacturing Corporation

200 Oser Avenue
Hauppauge, New York 11788

Tel: 1-631-273-1010
Fax: 1-631-273-1066

Email: info@royalprod.com

Toll-Free USA and Canada

Tel: 1-800-645-4174
Fax: 1-800-424-2082

www.royalprod.com